REPORT NUMBER: 208-MGA-2005-014

VEHICLE SAFETY COMPLIANCE TESTING FOR FMVSS 208, OCCUPANT CRASH PROTECTION FMVSS 212, WINDSHIELD MOUNTING FMVSS 219, WINSHIELD INTRUSION (PARTIAL) FMVSS 301, FUEL SYSTEM INTEGRITY

Toyota Motor Corporation
2005 Toyota Corolla Passenger Car
NHTSA No.: C55110

PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105

Test Date: August 16, 2005

Final Report Date: December 2, 2005

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE: NVS-220
400 SEVENTH STREET, SW, ROOM 6115
WASHINGTON, D.C. 20590

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-03-D-11002.

Prepared by: Jeff Lewandowski Date: December 2, 2005
Jeff Lewandowski, Project Engineer

Reviewed by: David Winkelbauer Date: December 2, 2005
David Winkelbauer, Facility Director

FINAL REPORT ACCEPTED BY OVSC:

Accepted By: _____

Acceptance Date: _____

Technical Report Documentation Page

1. Report No. 208-MGA-2005-014	*2. Government Accession No.*	*3. Recipient's Catalog No.*	
4. Title and Subtitle Final Report of FMVSS 208 Compliance Testing of a 2005 Toyota Corolla NHTSA No.: C55110		*5. Report Date* December 2, 2005 *6. Performing Organization Code* MGA	
7. Author(s) Jeff Lewandowski, Project Engineer		*8. Performing Organization Report No.* 208-MGA-2005-014	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-03-D-11002	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Enforcement Office of Vehicle Safety Compliance 400 Seventh St., S.W., Room 6115 NVS-220 Washington, D.C. 20590		*13. Type of Report and Period Covered* 8/16/05- 12/02/05 *14. Sponsoring Agency Code* NVS-220	
15. Supplementary Notes			
16. Abstract Compliance tests were conducted on the subject 2005 Toyota Corolla in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208-12 for the determination of FMVSS 208 compliance. Test failures identified were as follows: TEST FAILURES: None			
17. Key Words Frontal Impact 40 kmph Vehicle Safety Compliance Testing FMVSS 208, “Occupant Crash Protection” FMVSS 212, “Windshield Mounting” FMVSS 219, (partial), “Windshield Zone Intrusion” FMVSS 301, “Fuel System Integrity”		*18. Distribution Statement* Copies of this report are available from the following: NHTSA Technical Information Services (TIS), Mail Code: NPO-230 400 Seventh Street, S.W., Room 5108 Washington, D.C. 20590 Tel. No.: (202) 366-4946	
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Form DOT F1700.7 (8-72)

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SECTION 1

PURPOSE OF COMPLIANCE TEST

The tests performed are part of a program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-03-D-11002. The purpose of this test was to determine whether the subject vehicle, a 2005 Toyota Corolla, NHTSA No. C55110, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219, "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity". The compliance test was conducted in accordance with OVSC Laboratory Test Procedure No. TP208-12 dated January 14, 2003.

SECTION 2
TESTS PERFORMED

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
NHTSA No.: C55110
Test Date: 8/16/05

The following checked items indicate the tests that were performed:

- [ ] 1. Rear outboard seating position seat belts (S4.1.1.2(b) & (S4.2.4)
- [ ] 2. Air bag labels (S4.5.1)
- [ ] 3. Readiness indicator (S4.5.2)
- [ ] 4. Passenger air bag manual cut-off device (S4.5.4)
- [ ] 5. Lap belt lockability (S7.1.1.5)
- [ ] 6. Seat belt warning system (S7.3)
- [ ] 7. Seat belt contact force (S7.4.4)
- [ ] 8. Seat belt latch plate access (S7.4.4)
- [ ] 9. Seat belt retraction (S7.4.5)
- [ ] 10. Seat belt guides and hardware (S7.4.6)
- [ ] 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart R)
- [ ] 12. Suppression tests with newborn infant (Part 572, Subpart K)
- [ ] 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P)
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- [ ] 15. Test of reactivation of the passenger air bag system with an unbelted 5th percentile female dummy
- [ ] 16. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R)
- [ ] 17. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P)
- [ ] 18. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N)
- [ ] 19. Low risk deployment test with 5th female dummy (Part 572, Subpart O)
- [ ] 20. Impact Tests
  - [ ] Frontal Oblique
    - [ ] Belted 50th male dummy driver and passenger (0 to 48 kmph) (S5.1.1(a))
    - [ ] Unbelted 50th male dummy driver and passenger (0 to 48 kmph) (S5.1.2(a)(1))
    - [ ] Unbelted 50th male dummy driver and passenger (32 to 40 kmph) (S5.1.2(a) (1) or S5.1.2(b))
  - [X] Frontal 0°
    - [ ] Belted 50th male dummy driver (0 to 48 kmph) (S5.1.1.(b)(1) or S5.1.1(a))
    - [ ] Belted 50th male dummy passenger (0 to 48 kmph) (S5.1.1.(b)(1) or S5.1.1(a))
    - [ ] Belted 5th female dummy driver (0 to 48 kmph) (S16.1(a))
    - [ ] Belted 5th female dummy passenger (0 to 48 kmph) (S16.1(a))
    - [ ] Belted 50th male dummy driver and passenger (0 to 56 kmph) (S5.1.1.(b)(2))
    - [ ] Unbelted 50th male dummy driver and passenger (0 to 48 kmph) (S5.1.2(a) (1))
    - [X] Unbelted 50th male dummy driver (32 to 40 kmph) (S5.1.2.(a)(2) or S5.1.2(b))
    - [X] Unbelted 50th male dummy passenger (32 to 40 kmph) (S5.1.2.(a)(2) or S5.1.2(b))

		Unbelted 5th female dummy driver (32 to 40 kmph) (S16.1(b))
		Unbelted 5th female dummy passenger (32 to 40 kmph) (S16.1(b))
		40% Offset 0° Belted 5th male dummy driver and passenger (0 to 40 kmph) (S18.1)
	21.	Sled Test: unbelted 50th male dummy driver and passenger (S13)
	22.	FMVSS 204 Indicant Test
X	23.	FMVSS 212 Indicant Test
X	24.	FMVSS 219 Indicant Test
X	25.	FMVSS 301 Frontal Indicant Test

For the crash tests, the vehicle was instrumented with 8 accelerometers. The accelerometer data from the vehicle and dummies were sampled at 10,000 samples per second and processed as specified in SAE J211/1 MAR95 and FMVSS 208, S4.13.

The dynamic tests were recorded using high-speed film and high-speed digital video.

The vehicle appears to meet all of the performance requirements to which it was tested.

SECTION 3

INJURY RESULT SUMMARY FOR FMVSS 208 TESTS

Test Vehicle: 2005 Toyota Corolla NHTSA No.: C55110
Test Program: FMVSS 208 Compliance Test Date: 8/16/05

40 kmph Frontal Crash

Impact Angle: Zero degrees

Belted Dummies: ___Yes _X_ No
Speed Range: ___ 0 to 40 kmph _X_ 32 to 40 kmph
___ 0 to 48 kmph ___ 0 to 56 kmph

Test Speed: 39.9 kmph Test Weight: 1364.5 kg

Driver Dummy: ___5th female _X_50th male
Passenger Dummy: ___5th female _X_50th male

50th Percentile Male Frontal Crash Test
Vehicles certified to S5.1.1(b)(1), S5.1.1(b)(2), S5.1.2(a)(2), or S5.1.2(b)

Injury Criteria	Max. Allowable Injury Assessment Values	Driver	Passenger
HIC15	700	231	241
N_{te}	1.0	0.1	0.1
N_{tf}	1.0	0.3	0.1
N_{ce}	1.0	0.0	0.2
N_{cf}	1.0	0.5	1.0
Neck Tension	4170 N	736	150
Neck Compression	4000 N	3076	3919
Chest g	60 g	38	25
Chest Displacement	63 mm	24	9
Left Femur	10,000 N	4382	2990
Right Femur	10,000 N	3292	5175

SECTION 4

DISCUSSION OF TESTS

Test Vehicle:	2005 Toyota Corolla	NHTSA No.:	C55110
Test Program:	FMVSS 208 Compliance	Test Date:	8/16/05

The vehicle was tested in a 25 mph frontal impact only. FMVSS 208 Datasheets not used for this test have been removed from the report.

The post test FMVSS 301 rollover was not conducted at the direction of the COTR.

Driver and passenger H Point ATD positioning CCM data is provided in Appendix D.

SECTION 5

TEST DATA SHEETS

Test Vehicle:	2005 Toyota Corolla	NHTSA No.:	C55110
Test Program:	FMVSS 208 Compliance	Test Dates:	8/16/05

DATA SHEET 1

COTR VEHICLE WORK ORDER

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
NHTSA No.: C55110
Test Date: 8/16/05

COTR Signature: Charles R. Case

Test to be performed for this vehicle are checked below:

- [ ] 1. Rear Outboard Seating Position Seat Belts (S4.1.2(b)) & (S4.2.4)
- [ ] 2. Air Bag Labels (S4.5.1)
- [ ] 3. Readiness Indicator (S4.5.2)
- [ ] 4. Passenger Air Bag Manual Cut-off Device (S4.5.4)
- [ ] 5. Lap Belt Lockability (S7.1.1.5)
- [ ] 6. Seat Belt Warning System (S7.3)
- [ ] 7. Seat Belt Contact Force (S7.4.4)
- [ ] 8. Seat Belt Latch Plate Access (S7.4.4)
- [ ] 9. Seat Belt Retraction (S7.4.5)
- [ ] 10. Seat Belt Guides and Hardware (S7.4.6)
- [ ] 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart R) using the following indicated child restraints.

Section B

[ ] Britax Handle with Care 191	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Century Assura 4553	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Century Avanta SE 41530	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Century Smart Fit 4543	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Cosco Arriva 02727	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Cosco Opus 35 02603	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Evenflo Discovery Adjust Right 212	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Evenflo First Choice 204	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Evenflo On My Way Position Right V 282	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Graco Infant 8457	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward

Section C

[ ] Britax Roundabout 161	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Century Encore 4612	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Century STE 1000 4416	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Cosco Olympian 02803	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Cosco Touriva 02519	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Evenflo Horizon V 425	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward
[ ] Evenflo Medallion 254	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward

- [ ] 12. Suppression tests with newborn infant (Part 572, Subpart K) using the following indicated child restraints.

Section A

[ ] Cosco Dream Ride 02-719	[ ] Full Rearward	[ ] Mid Position	[ ] Full Forward

- [ ] 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P) using the following indicated child restraints where a child restraint is required.

Section C

Britax Roundabout 161	Full Rearward	Mid Position	Full Forward
Century Encore 4612	Full Rearward	Mid Position	Full Forward
Century STE 1000 4416	Full Rearward	Mid Position	Full Forward
Cosco Olympian 02803	Full Rearward	Mid Position	Full Forward
Cosco Touriva 02519	Full Rearward	Mid Position	Full Forward
Evenflo Horizon V 425	Full Rearward	Mid Position	Full Forward
Evenflo Medallion 254	Full Rearward	Mid Position	Full Forward

Section D

Britax Roadster 9004	Full Rearward	Mid Position	Full Forward
Century Next Step 4920	Full Rearward	Mid Position	Full Forward
Cosco High Back Booster 02-442	Full Rearward	Mid Position	Full Forward
Evenflo Right Fit 245	Full Rearward	Mid Position	Full Forward

14. Suppression tests with representative 3-year-old child using the following indicated child restraints where a child restraint is required. (Appendix H, Data Sheet 16H and 17H)

Section C

Britax Roundabout 161	Full Rearward	Mid Position	Full Forward
Century Encore 4612	Full Rearward	Mid Position	Full Forward
Century STE 1000 4416	Full Rearward	Mid Position	Full Forward
Cosco Olympian 02803	Full Rearward	Mid Position	Full Forward
Cosco Touriva 02519	Full Rearward	Mid Position	Full Forward
Evenflo Horizon V 425	Full Rearward	Mid Position	Full Forward
Evenflo Medallion 254	Full Rearward	Mid Position	Full Forward

Section D

Britax Roadster 9004	Full Rearward	Mid Position	Full Forward
Century Next Step 4920	Full Rearward	Mid Position	Full Forward
Cosco High Back Booster 02-442	Full Rearward	Mid Position	Full Forward
Evenflo Right Fit 245	Full Rearward	Mid Position	Full Forward

15. Suppression tests with 3-year-old dummy (Part 572, Subpart P) in the following Forward, Middle, and Rearward seat track positions

- Sitting on seat with back against seat back (S22.2.2.1)
- Sitting on seat with back against reclined seat back (S22.2.2.2)
- Sitting on seat with back not against seat back (S22.2.2.3)
- Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
- Standing on seat, facing forward (S22.2.2.5)
- Kneeling on seat facing forward (S22.2.2.6)
- Kneeling on seat facing rearward (S22.2.2.7)
- Lying on seat (S22.2.2.8)

16. Suppression tests with representative 3-year-old child in the following positions

- Sitting on seat with back against seat back (S22.2.2.1)
- Sitting on seat with back against reclined seat back (S22.2.2.2)
- Sitting on seat with back not against seat back (S22.2.2.3)
- Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
- Standing on seat, facing forward (S22.2.2.5)
- Kneeling on seat facing forward (S22.2.2.6)
- Kneeling on seat facing rearward (S22.2.2.7)
- Lying on seat (S22.2.2.8)

17. Suppression tests with 6-year-old dummy (Part 572, Subpart N) using the following indicated child restraints where a child restraint is required.

Section D

Britax Roadster 9004	Full Rearward	Mid Position	Full Forward
Century Next Step 4920	Full Rearward	Mid Position	Full Forward
Cosco High Back Booster 02-442	Full Rearward	Mid Position	Full Forward
Evenflo Right Fit 245	Full Rearward	Mid Position	Full Forward

18. Suppression tests with representative 6-year-old child using the following indicated child restraints where a child restraint is required.

Section D

Britax Roadster 9004	Full Rearward	Mid Position	Full Forward
Century Next Step 4920	Full Rearward	Mid Position	Full Forward
Cosco High Back Booster 02-442	Full Rearward	Mid Position	Full Forward
Evenflo Right Fit 245	Full Rearward	Mid Position	Full Forward

19. Suppression tests with 6-year-old dummy (Part 572, Subpart N) in the following Forward, Middle, and Rearward seat track positions

- Sitting on seat with back against seat back (S22.2.2.1)
- Sitting on seat with back against reclined seat back (S22.2.2.2)
- Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
- Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

20. Suppression tests with representative 6-year-old child in the following positions

- Sitting on seat with back against seat back (S22.2.2.1)
- Sitting on seat with back against reclined seat back (S22.2.2.2)
- Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
- Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

21. Test of Reactivation of the Passenger Air Bag System with an Unbelted 5th percentile female dummy (S20.3, 22.3, S24.3). Perform this test after the following suppression tests: After each restraint.

22. Test of Reactivation of the passenger air bag system with a representative 5th percentile female (S20.3, 22.3, S24.3). Perform this test after the following suppression tests:

23. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints.

Section B

Britax Handle with Care 191	Full Rearward	Mid Position	Full Forward
Century Assura 4553	Full Rearward	Mid Position	Full Forward
Century Avanta SE 41530	Full Rearward	Mid Position	Full Forward
Century Smart Fit 4543	Full Rearward	Mid Position	Full Forward
Cosco Arriva 02727	Full Rearward	Mid Position	Full Forward
Cosco Opus 35 02603	Full Rearward	Mid Position	Full Forward
Evenflo Discovery Adjust Right 212	Full Rearward	Mid Position	Full Forward
Evenflo First Choice 204	Full Rearward	Mid Position	Full Forward
Evenflo On My Way Position Right V 282	Full Rearward	Mid Position	Full Forward
Graco Infant 8457	Full Rearward	Mid Position	Full Forward

Section C

Britax Roundabout 161	Full Rearward	Mid Position	Full Forward
Century Encore 4612	Full Rearward	Mid Position	Full Forward
Century STE 1000 4416	Full Rearward	Mid Position	Full Forward
Cosco Olympian 02803	Full Rearward	Mid Position	Full Forward
Cosco Touriva 02519	Full Rearward	Mid Position	Full Forward
Evenflo Horizon V 425	Full Rearward	Mid Position	Full Forward
Evenflo Medallion 254	Full Rearward	Mid Position	Full Forward

- [ ] 24. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P) in the following positions
  - [ ] Position 1
  - [ ] Position 2
- [ ] 25. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N) in the following positions
  - [ ] Position 1
  - [ ] Position 2
- [ ] 26. Low risk deployment test with 5th percentile female dummy (Part 572, Subpart O) in the following positions
  - [ ] Position 1
  - [ ] Position 2
- [X] 27. Impact Tests
  - [ ] Frontal Oblique – Test Speed:
    - [ ] Belted 50th male dummy driver and passenger (0 to 48 kmph) (S5.1.1(a))
    - [ ] Unbelted 50th male dummy driver and passenger (0 to 48 kmph) (S5.1.2(a)(1))
    - [ ] Unbelted 50th male dummy driver and passenger (32 to 40 kmph) (S5.1.2(a) (1) or S5.1.2(b))
  - [X] Frontal 0° - Test Speed: 39.9 kmph
    - [ ] Belted 50th male dummy driver (0 to 48 kmph) (S5.1.1.(b)(1) or S5.1.1(a))
    - [ ] Belted 50th male dummy passenger (0 to 48 kmph) (S5.1.1.(b)(1) or S5.1.1(a))
    - [ ] Belted 5th female dummy driver (0 to 48 kmph) (S16.1(a))
    - [ ] Belted 5th female dummy passenger (0 to 48 kmph) (S16.1(a))
    - [ ] Belted 50th male dummy driver and passenger (0 to 56 kmph) (S5.1.1.(b)(2))
    - [ ] Unbelted 50th male dummy driver and passenger (0 to 48 kmph) (S5.1.2(a) (1))
    - [X] Unbelted 50th male dummy driver (32 to 40 kmph) (S5.1.2.(a)(2) or S5.1.2(b))
    - [X] Unbelted 50th male dummy passenger (32 to 40 kmph) (S5.1.2.(a)(2) or S5.1.2(b))
    - [ ] Unbelted 5th female dummy driver (32 to 40 kmph) (S16.1(b))
    - [ ] Unbelted 5th female dummy passenger (32 to 40 kmph) (S16.1(b))
  - [ ] 40% Offset 0° Belted 5th male dummy driver and passenger (0 to 40 kmph) (S18.1) – Test Speed:
- [ ] 28. Sled Test: Unbelted 50th male dummy driver and passenger (S13)
- [ ] 29. FMVSS 204 Indicant Test
- [X] 30. FMVSS 212 Indicant Test
- [X] 31. FMVSS 219 Indicant Test
- [X] 32. FMVSS 301 Frontal Indicant Test

DATA SHEET 2

REPORT OF VEHICLE CONDITION

Test Vehicle: 2005 Toyota Corolla NHTSA No.: C55110
Test Program: FMVSS 208 Compliance Test Date: 8/16/05

CONTRACT NO. DTNH22- 03-D-11002 Date: 8/19/05
FROM (Lab and rep name): MGA Research Corporation
TO: NHTSA, OVSC (NVS-220)

PURPOSE: (X) Initial Receipt ( ) Received via Transfer (X) Present vehicle condition

MODEL YEAR/MAKE/MODEL/BODY STYLE:	2005 Toyota Corolla LE Sedan		
MANUFACTURE DATE:	06/04		
NHTSA NO.	C55110	GVWR:	1626 kg (3585 lbs)
BODY COLOR:	White	GAWR (Fr):	855 kg (1885 lbs)
VIN:	JTDBR32E652050860	GAWR (Rr):	780 kg (1720 lbs)

ODOMETER READINGS:	ARRIVAL (miles):	269	DATE:	7/20/05
	COMPLETION (miles):	271	DATE:	8/16/05
PURCHASE PRICE: ($)	16,417			
DEALER'S NAME:	Bobby Rahal Toyota; 6305 Carlisle Pike; Mechanicsburg, PA 17050			

A. All options listed on window sticker are present on the test vehicle:
_X_Yes ___No
B. Tires and wheel rims are new and the same as listed: _X_Yes ___No
C. There are no dents or other interior or exterior flaws: _X_Yes ___No
D. The vehicle has been properly prepared and is in running condition:
_X_Yes ___No
E. Keyless remote is available and working: _X_ Yes ___No
F. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys: _X_Yes ___No
G. Proper fuel filler cap is supplied on the test vehicle: _X_Yes ___No
H. Using permanent marker, identify vehicle with NHTSA number and FMVSS test type(s) on roof line above driver door or for school buses, place a placard with NHTSA number inside the windshield and to the exterior front and rear side of bus:
_X_Yes ___No
I. Place vehicle in storage area: _X_Yes ___No
J. Inspect the vehicle's interior and exterior, including all windows, seats, doors, etc. to confirm that each system is complete and functional per the manufacturer's specifications. Any damage, misadjustment, or other unusual condition that could influence the test program or test results shall be recorded. Report any abnormal condition to the NHTSA COTR before beginning any test:
_X_Vehicle OK ___Conditions reported below

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

LIST OF FMVSS TESTS PERFORMED BY THIS LAB: FMVSS 208, 212, 219, 301

VEHICLE: 2005 Toyota Corolla NHTSA NO. C55110

REMARKS:

Equipment that is no longer on the test vehicle as noted on previous page:

Spare tire, jack and tools, wheel covers, and trunk interior

Explanation for equipment removal:

Components removed for instrumentation installation and to meet target weight.

Test Vehicle Condition:

25 mph frontal impact damage- front suspension & structure damaged, hood & front quarter panels damaged, radiator damaged, air bags & pretensioners deployed, Stoddard in fuel system

RECORDED BY: Jeff Lewandowski DATE: 8/19/2005

APPROVED BY: David Winkelbauer DATE: 8/19/2005

##########

RELEASE OF TEST VEHICLE

The vehicle described above is released from MGA to be delivered to:

Date: Time: Odometer:

Lab Rep's Signature:

Title:

Carrier/Customer Rep:

Date:

DATA SHEET 3

CERTIFICATION LABEL AND TIRE PLACARD INFORMATION

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Nick Kosinski

NHTSA No.: C55110
Test Date: 8/16/05

Certification Label	
Manufacturer:	Toyota Motor Corporation
Date of Manufacture:	06/04
VIN:	JTDBR32E652050860
Vehicle Certified As (Pass. Car/MPV/Truck/Bus):	Passenger Car
Front Axle GVWR:	855 kg (1885 lbs)
Rear Axle GVWR:	780 kg (1720 lbs)
Total GVWR:	1626 kg (3585 lbs)

Tire Placard	
Not applicable, vehicle is not a passenger car and does not have a tire placard.	Passenger Car
This is not a passenger car, but all or part of this information is still contained on a vehicle label and is reported here.	Passenger Car
Vehicle Capacity Weight:	390 kg (860 lbs)
Designated Seating Capacity Front:	2
Designated Seating Capacity Rear:	3
Total Designated Seating Capacity:	5
Recommended Cold Tire Inflation Pressure Front:	210 kpa (30 psi)
Recommended Cold Tire Inflation Pressure Rear:	210 kpa (30 psi)
Recommended Tire Size:	P195/65R15

Signature: 

Date: 8/16/05

DATA SHEET 14

MARKING OF REFERENCE POINTS FOR VARIOUS TEST POSITIONS AND POINTS

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Eric Peschman

NHTSA No.: C55110
Test Date: 8/16/05

1. Driver Designated Seating Position:

[X] 1.1 Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment positions. (S16.2.10.1)

[X] N/A – No lumbar adjustment

[X] 1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position (S16.2.10.2)

[X] N/A – No additional support adjustment

[X] 1.3 Mark a point (seat cushion reference point) on the side of the seat cushion that is between 150 mm and 250 mm from the front edge of the seat cushion.

[X] 1.4 Draw a line (seat cushion reference line) through the seat cushion reference point.

[X] 1.5 Using only the controls that primarily move the seat in the fore-aft direction, move the seat cushion reference point to the rearmost position.

[X] 1.6 If the seat cushion adjusts fore-aft, independent of the seat back, use only the controls that primarily move the seat cushion in the fore-aft direction to move the seat cushion reference point to the rearmost position (S16.2.10.3)

[X] N/A – No independent fore-aft seat cushion adjustment

[X] 1.7 Using any part of any control, other than the parts just used for fore-aft positioning, determine the range of angles of the seat cushion reference line and set the seat cushion reference line at the mid-angle.

[X] Maximum Angle: 1.8° Nose Up

[X] Minimum Angle: 4.9° Nose Down

[X] Mid-angle: 1.6° Nose Down

[X] 1.8 If the seat and/or seat cushion height is adjustable, use any part of any control other than those which primarily move the seat or seat cushion fore-aft, to put the seat cushion reference point in its lowest position with the seat cushion reference line angle at the mid-angle found in 1.7.

[ ] N/A – No seat height adjustment

[X] 1.9 Using only the controls that primarily move the seat in the fore-aft direction, verify the seat is in the rearmost position.

[X] 1.10 Using only the controls that primarily move the seat in the fore-aft direction, mark for future reference the fore-aft seat positions. Mark each position so that there is a visual indication when the seat is at a particular position. For manual seats, move the seat forward one detent at a time and mark each detent. For power seats, mark only the rearmost, middle, and foremost positions. Label three of the positions with the following: F for foremost, M for mid-position (if there is no mid-position, label the closest adjustment position to the rear of the mid-point), and R for rearmost.

[X] 1.11 Use only the controls that primarily move the seat in the fore-aft direction to place the seat in the rearmost position.

X 1.12 Using any controls, other than the controls that primarily move the seat and/or seat cushion in the fore-aft direction, find and visually mark for future reference the maximum, minimum, and middle height of the seat cushion reference point with the seat cushion reference line at the mid-angle determined in 1.7.

X 1.13 Using only the controls that primarily move the seat and/or seat cushion in the fore-aft direction, place the seat in the mid-fore-aft position.

X 1.14 Using any controls, other than the controls that primarily move the seat in the fore-aft direction, find and visually mark for future reference the maximum, minimum, and middle height of the seat cushion reference point with the seat cushion reference line at the mid-angle determined in 1.7.

X 1.15 Using only the controls that change the seat in the fore-aft direction, place the seat in the foremost position.

X 1.16 Using any controls, other than the controls that primarily move the seat in the fore-aft direction, find and visually mark for future reference the maximum, minimum, and middle height of the seat cushion reference point with the seat cushion reference line at the mid-angle determined in 1.7.

X 1.17 Visually mark for future reference the seat back angle, if adjustable, at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer.

[ ] N/A – No seat back angle adjustment

X Manufacturer's design seat back angle: 88.3 degrees on Head Rest Post

X 1.18 Is the seat a bucket seat?

[X] Yes, go to 1.18.1 and skip 1.18.2

[ ] No, go to 1.18.2 and skip 1.18.1

1.18.1 Bucket seats:

[X] Locate and mark for future reference the longitudinal centerline of the seat cushion. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle. (S16.3.1.10)

X Record the width of the seat cushion: Used SRP Provided By Manufacturer

X One half the width of the seat cushion is: Used SRP Provided By Manufacturer

X Record the distance from the edge of the seat cushion to the seat mark: 260 mm

1.18.2 Bench seats:

[ ] Locate and mark for future reference the longitudinal line on the seat cushion that marks the longitudinal vertical plane through the centerline of the steering wheel.

2. Passenger Designated Seating Position

X 2.1 Is the seat adjustable independent of the driver seating position?

[X] Yes, go to 2.2

[ ] No, go to 2.18

X 2.2 Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment positions (S16.2.10.1, S20,1.9.1, S22.1.7.1)

[X] N/A – No lumbar adjustment

X 2.3 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2, S20.1.9.2, S22.1.7.2)

[X] N/A – No additional support adjustment

X	2.4	Mark a point (seat cushion reference point) on the side of the seat cushion that is between 150 mm and 250 mm from the front edge of the seat cushion.
X	2.5	Draw a line (seat cushion reference line) through the seat cushion reference point.
X	2.6	Using only the controls that primarily move the seat in the fore-aft direction, move the seat cushion reference point to the rearmost position.
X	2.7	If the seat cushion adjusts fore-aft, independent of the seat back, use only the controls that primarily move the seat cushion in the fore-aft direction to move the seat cushion reference point to the rearmost position (S16.2.10.3, S20.1.9.3, S22.1.7.3)
		X N/A – No independent fore-aft seat cushion adjustment.
X	2.8	Using any part of the control, other than the parts just used for fore-aft positioning, determine the range of angles of the seat cushion reference line and set the seat cushion reference line at the mid-angle.
X		Maximum Angle: Not Adjustable
X		Minimum Angle: Not Adjustable
X		Mid-angle: Not Adjustable
X	2.9	If the seat and/or seat cushion height is adjustable, use any part of any control other than those which primarily move the seat or seat cushion fore-aft, to put the seat cushion reference point in its lowest position with the seat cushion reference line angle at the mid-range angle.
		X N/A – No seat height adjustment
X	2.10	Using only the controls that primarily move the seat and/or seat cushion in the fore-aft direction, verify the seat is in the rearmost position.
X	2.11	Using only the controls that primarily move the seat in the fore-aft direction, mark for future reference the fore-aft seat positions. Mark each position so that there is a visual indication when the seat is at a particular position. For manual seats, move the seat forward one detent at a time and mark each detent. For power seats, mark only the rearmost, middle, and foremost positions. Label three of the positions with the following: F for foremost, M for mid-position (if there is no mid-position, label the closest adjustment position to the rear of the mid-point), and R for rearmost.
X	2.12	Using only the controls that primarily move the seat in the fore-aft direction, place the seat in the rearmost position.
X	2.13	Using any controls, other than the controls that primarily move the seat in the fore-aft direction, find and visually mark for future reference the maximum, minimum, and middle height of the seat cushion reference point with the seat cushion reference line at the mid-angle determined in 2.8.
		X N/A – No seat height adjustment Go to 2.18
	2.14	Using only the controls that primarily move the seat in the fore-aft direction, place the seat in the mid-fore-aft position.
	2.15	Using any controls, other than the controls that primarily move the seat in the fore-aft direction, find and visually mark for future reference the maximum, minimum, and middle height of the seat cushion reference point with the seat cushion reference line at the mid-angle determined in 2.8.
	2.16	Using only the controls that change the seat in the fore-aft direction, place the seat in the foremost position.

	2.17	Using any controls, other than the controls that primarily move the seat in the fore-aft direction, find and visually mark for future reference the maximum, minimum, and middle height of the seat cushion reference point with the seat cushion reference line at the mid-angle determined in 2.8.
X	2.18	Visually mark for future reference the seat back angle, if adjustable, at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer.
		N/A – No seat back angle adjustment
		N/A – The seat back angle adjustment is controlled by the setting of the driver seat back angle.
X		Manufacturer's design seat back angle: 89.0° on Head Rest Post
X		Actual seat back angle: 89.1° on Head Rest Post
X	2.19	Is the seat a bucket seat?
X		Yes, go to 2.19.1 and skip 2.19.2
		No, go to 2.19.2 and skip 2.19.1
		2.19.1 Bucket seats:
X		Locate and mark for future reference the longitudinal centerline of the seat cushion. (S20.2.1.3, S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle. (S20.1.10)
X		Record the width of the seat cushion: Used SRP Provided By Manufacturer
X		One half the width of the seat cushion is: Used SRP Provided By Manufacturer
X		Record the distance from the edge of the seat cushion to the longitudinal centerline of the seat cushion. (The vertical plane through this longitudinal centerline is Plane B for suppression.) 260 mm
		2.19.2 Bench seats:
		Locate and mark for future reference the longitudinal centerline of the passenger seat cushion. The longitudinal centerline is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel. (S20.2.1.3, S22.2.1.3)
		Record the distance from the longitudinal centerline of the vehicle to the center of the steering wheel:
		Record the distance from the longitudinal centerline of the vehicle to the longitudinal centerline of the seat cushion. (The vertical plane through this longitudinal centerline is Plane B for suppression.)
X	3.	Head Restraints
		N/A, vehicle contains automatic head restraints
		N/A, there is no head restraint adjustment
X	3.1	Left outboard
X	3.1.1	Adjust the head restraint to its lowest position. (S16.3.4.2)
	3.1.2	Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible. **Mark** the foremost position.
X	3.1.3	Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate and **mark** a horizontal plane through the midpoint of this distance.
X		Vertical height of head restraint (mm): 180
X		Mid-point height (mm): 90

X 3.2 Right outboard

X 3.2.1 Adjust the head restraint to its lowest position. (S16.3.4.2)

3.2.2 Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible. **Mark** the foremost position.

X 3.2.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate and **mark** a horizontal plane through the midpoint of this distance.

X Vertical height of head restraint (mm): 180

X Mid-point height (mm): 90

X 4. Steering Wheel

X 4.1 Is the steering wheel adjustable up and down and/or in and out?

X Yes, go to 4.2

No, this form is complete

X 4.2 Find and **mark** for future reference each up and down position. Label three of the positions with the following: H for highest, M for mid-position (if there is no mid-position, label the next lowest adjustment position), and L for lowest.

N/A, steering wheel is not adjustable up and down

X 4.3 Find and **mark** for future references each in and out position. Label three of the positions with the following: F for foremost, M for mid-position (if there is no mid-position, label the next rearmost adjustment position), and R for rearmost.

X N/A, steering wheel is not adjustable in and out

X 5. Driver Low Risk Deployment

X N/A, no low risk deployment tests scheduled

5.1 Position the steering wheel so the front wheels are in the straight-ahead position. (S26.2.1)

5.2 Position any adjustable parts of the steering controls to the mid-position as determined in item 3 above. If a mid-position adjustment is not achievable, position the controls to the next lowest detent position. (S26.2.1)

5.3 Locate the vertical plane parallel to the vehicle longitudinal centerline through the geometric center of the opening through which the driver air bag deploys into the occupant compartment. This is referred to as “Plane E”. (Check determination method below.) (S26.2.6)

Plane E determined using manufacturer’s information supplied by the COTR .

Plane E determined by test lab personnel and approved by the COTR. (Include supporting documentation in the test report.)

	Ey (mm)
“Plane E” Measurement:	
Measured:	
Specified:	
Verify Measured Equals Specified +/- 6mm:	

☐ 5.4 Locate the horizontal plane through the highest point of the air bag module cover. This is referred to as “Plane F." (Check determination method below.) (S26.2.6)

☐ Plane F determined using manufacturer’s information supplied by the COTR .

☐ Plane F determined by test lab personnel and approved by the COTR. (Include supporting documentation in the test report.)

	Fz (mm)
“Plane F” Measurement:	
Measured:	
Specified:	
Verify Measured Equals Specified +/- 6mm:	

☒ 6. Passenger Low Risk Deployment – Planes C and D

☒ N/A, no low risk deployment tests scheduled

☐ 6.1 Locate the horizontal plane through the geometric center of the opening through which the right front air bag deploys into the occupant compartment. This is referred to as "Plane C." (Check location method below.) (S22.4.1.3)

☐ Plane C located using manufacturer’s information supplied by the COTR. (Include manufacturer’s information in the test report.) OR

☐ Plane C located by test lab personnel and approved by the COTR. (Include supporting documentation in the test report.)

	Cz (mm)
“Plane C” Measurement:	
Measured:	
Specified:	
Verify Measured Equals Specified +/- 6mm:	

☐ 6.2 Locate the vertical plane parallel to the vehicle longitudinal centerline through the geometric center of the opening through which the right front air bag deploys into the occupant compartment. This is referred to as “Plane D." (Check determination method below.) (S22.4.1.2)

☐ Plane D determined using manufacturer’s information supplied by the COTR. (Include manufacturer’s information in the test report.) OR

☐ Plane D determined by test lab personnel and approved by the COTR. (Include supporting documentation in the test report.)

	Dy (mm)
“Plane D” Measurement:	
Measured:	
Specified:	
Verify Measured Equals Specified +/- 6mm:	

☐ 6.3 **Mark** the intersection of Planes C and D on the instrument panel.

7. 5th Female Dummy
Mark a point on the chin of the dummy 40 mm below the center of the mouth. (Chin Point) (S26.2.6)

8. 6-Year-Old Dummy
Locate and **mark** a point on the front of the dummy's chest jacket on the midsaggital plane which is 139 mm (5.5 in) ± 3 mm (± 0.1 in) along the surface of the skin down from the top of the skin at the neck line. Designate this point as "Point 1." (S24.4.1.1)

"Point 1" measurement (mm):

9. 3-Year-Old Dummy
Locate and **mark** a point on the front of the dummy's chest jacket on the midsaggital plane which is 114 mm (4.5 in) ± 3 mm (± 0.1 in) along the surface of the skin down from the top of the skin at the neck line. Designate this point as "Point 1." (S22.4.1.1)

"Point 1" measurement (mm +/- 3 mm):

REMARKS:
I certify that I have read and performed each instruction.

Signature: _____ Date: 8/16/05

DATA SHEET 30
VEHICLE WEIGHT, FUEL TANK, AND ATTITUDE DATA

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Nick Kosinski

NHTSA No.: C55110
Test Date: 8/16/05

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

X 1. Fill the transmission with transmission fluid to the satisfactory range.
X 2. Drain fuel from vehicle
X 3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.
X 4. Record the useable fuel tank capacity supplied by the COTR
X Useable Fuel Tank Capacity supplied by COTR: 50.0 liters (13.2 gallons)
X 5. Record the fuel tank capacity supplied in the owner's manual.
X Useable Fuel Tank Capacity in owner's manual: 50.0 liters (13.2 gallons)
X 6. Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," or gasoline, fill the fuel tank.
X Amount Added: 50.0 liters (13.2 gallons)
X 7. Fill the coolant system to capacity.
X 8. Fill the engine with motor oil to the Max. mark on the dip stick.
X 9. Fill the brake reservoir with brake fluid to its normal level.
X 10. Fill the windshield washer reservoir to capacity.
X 11. Inflate the tires to the tire pressure on the tire placard. If no tire placard is available, inflate the tires to the recommended pressure in the owner's manual.

Tire placard pressure:	RF:	30 psi	LF:	30 psi	RR:	30 psi	LR:	30 psi
Owner's manual pressure:	RF:	30 psi	LF:	30 psi	RR:	30 psi	LR:	30 psi
Actual inflated pressure:	RF:	30 psi	LF:	30 psi	RR:	30 psi	LR:	30 psi

X 12. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight).

Right Front (kg):	349.5	Right Rear (kg):	221.5
Left Front (kg):	369.0	Left Rear (kg):	227.0
Total Front (kg):	718.5	Total Rear (kg):	448.5
% Total Weight:	61.6	% Total Weight:	38.4
UVW = TOTAL FRONT PLUS TOTAL REAR (KG):			1167.0

X 13. UVW Test Vehicle Attitude: (All dimensions in millimeters)
X 13.1 Mark a point on the vehicle above the center of each wheel.
X 13.2 Place the vehicle on a level surface.

X 13.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements

RF:	683	LF:	684	RR:	711	LR:	706

X 14. Calculate the Rated Cargo and Luggage Weight (RCLW): 50 kg

X 14.1 Does the vehicle have the vehicle capacity weight (VCW) on the certification label or tire placard?

X X Yes, go to 14.3

No, go to 14.2

14.2 VCW = Gross Vehicle Weight – UVW

VCW = _____ - _____ = _____

X 14.3 VCW = 390 kg (860 lbs)

X 14.4 Does the certification or tire placard contain the Designated Seating Capacity (DSC)?

X Yes, go to 14.6

No, go to 14.5 and skip 14.6

14.5 DSC = Total number of seat belt assemblies = _____

X 14.6 DSC = 5

X 14.7 RCLW = VCW – (68 kg x DSC) = 390 kg - (68 kg x 5) = 50 kg

X 14.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?

Yes, if the calculated RCLW is greater than 136 kg, use 136 kg as the RCLW. (S8.1.1)

X No, use the RCLW calculated in 14.7

X 15. Fully Loaded Weight (100% fuel fill): 1374.0 kg

X 15.1 Place the appropriate test dummy in both front outboard seating positions.

Driver: __ 5th female X 50th male
Passenger: __ 5th female X 50th male

X 15.2 Load the vehicle with the RCLW from 14.7 or 14.8 whichever is applicable.

X 15.3 Place the RCLW in the cargo area. Center the load over the longitudinal centerline of the vehicle. (S8.1.1 (d))

X 15.4 Record the vehicle weight at each wheel to determine the Fully Loaded Weight.

Right Front (kg):	387.0	Right Rear (kg):	282.0
Left Front (kg):	414.0	Left Rear (kg):	291.0
Total Front (kg):	801.0	Total Rear (kg):	573.0
% Total Weight:	58.3	% Total Weight:	41.7
% GVW	52.6	% GVW	48.0
(% GVW = Axle GVW divided by Vehicle GVW)			
Fully Loaded Weight = Total Front Plus Total Rear (kg):			1374.0

X 16. Fully Loaded Test Vehicle Attitude: (All dimensions in millimeters)

X 16.1 Place the vehicle on a level surface.

X 16.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 13.1 above) and record the measurements

RF:	671	LF:	669	RR:	681	LR:	673

X 17. Drain the fuel system

X 18. Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," fill the fuel tank to 92 - 94 percent of useable capacity.

X Fuel tank capacity x .94 = 50.0 liters (13.2 gallons) x .94 = 47.0 liters (12.4 gallons)

X Amount added 46.6 liters (12.3 gallons) 93.2%

X 19. Crank the engine to fill the fuel delivery system with Stoddard solvent

X 20. Calculate the test weight range.

X 20.1 Calculated Weight = UVW (see 12 above) + RCLW (see 14 above) + 2x(dummy weight)

1373.0 kg = 1167.0 kg + 50.0 kg + 156.0 kg

X 20.2 Test Weight Range = Calculated Weight (- 4.5 kg, - 9 kg.)
Max. Test Weight = Calculated Test Weight – 4.5 kg = 1368.5 kg
Min. Test Weight = Calculated Test Weight – 9 kg = 1364.0 kg

X 21. Remove the RCLW from the cargo area.

X 22. Drain transmission fluid, engine coolant, motor oil, and windshield washer fluid from the test vehicle so that Stoddard solvent leakage from the fuel system will be evident.

X 23. Vehicle Components Removed For Weight Reduction:
Spare tire, tool and jack, wheel covers, and trunk interior

X 24. Secure the equipment and ballast in the load carrying area and distribute it, as nearly as possible, to obtain the proportion of axle weight indicated by the gross axle weight ratings and center it over the longitudinal centerline of the vehicle.

X 25. If necessary, add ballast to achieve the actual test weight.

X N/A

Weight of Ballast:

X 26. Ballast, including test equipment, must be contained so that it will not shift during the impact event or interfere with data collection or interfere with high-speed film recordings or affect the structural integrity of the vehicle or do anything else to affect test results. Care must be taken to assure that any attachment hardware added to the vehicle is not in the vicinity of the fuel tank or lines.

X 27. Record the vehicle weight at each wheel to determine the actual test weight.

Right Front (kg):	393.0	Right Rear (kg):	277.0
Left Front (kg):	414.5	Left Rear (kg):	280.0
Total Front (kg):	807.5	Total Rear (kg):	557.0
% Total Weight:	59.2	% Total Weight:	40.8
% GVW	52.6	% GVW	48.0
(% GVW = Axle GVW divided by Vehicle GVW)			
TOTAL FRONT PLUS TOTAL REAR (kg):			1364.5

X	28.	Is the test weight between the Max. Weight and the Min. Weight (See 20.2)?

X Yes

No, explain why not.

X	29.	Test Weight Vehicle Attitude: (all dimensions in millimeters)
X	29.1	Place the vehicle on a level surface
X	29.2	Measure perpendicular to the level surface to the 4 points marked on the body (see 13 above) and record the measurements

RF:	672	LF:	670	RR:	681	LR:	689

X	30.	Summary of test attitude
X	30.1	AS DELIVERED:

RF:	683	LF:	684	RR:	711	LR:	706

AS TESTED:

RF:	672	LF:	670	RR:	681	LR:	689

FULLY LOADED:

RF:	671	LF:	669	RR:	681	LR:	673

X	30.2	Is the "as tested" test attitude equal to or between the "fully loaded" and "as delivered" attitude?

X Yes

No, explain why not.

REMARKS:

I certify that I have read and performed each instruction.

Signature: 

Date: 8/16/05

DATA SHEET 31

VEHICLE ACCELEROMETER LOCATION AND MEASUREMENT

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Nick Kosinski

NHTSA No.: C55110
Test Date: 8/16/05

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

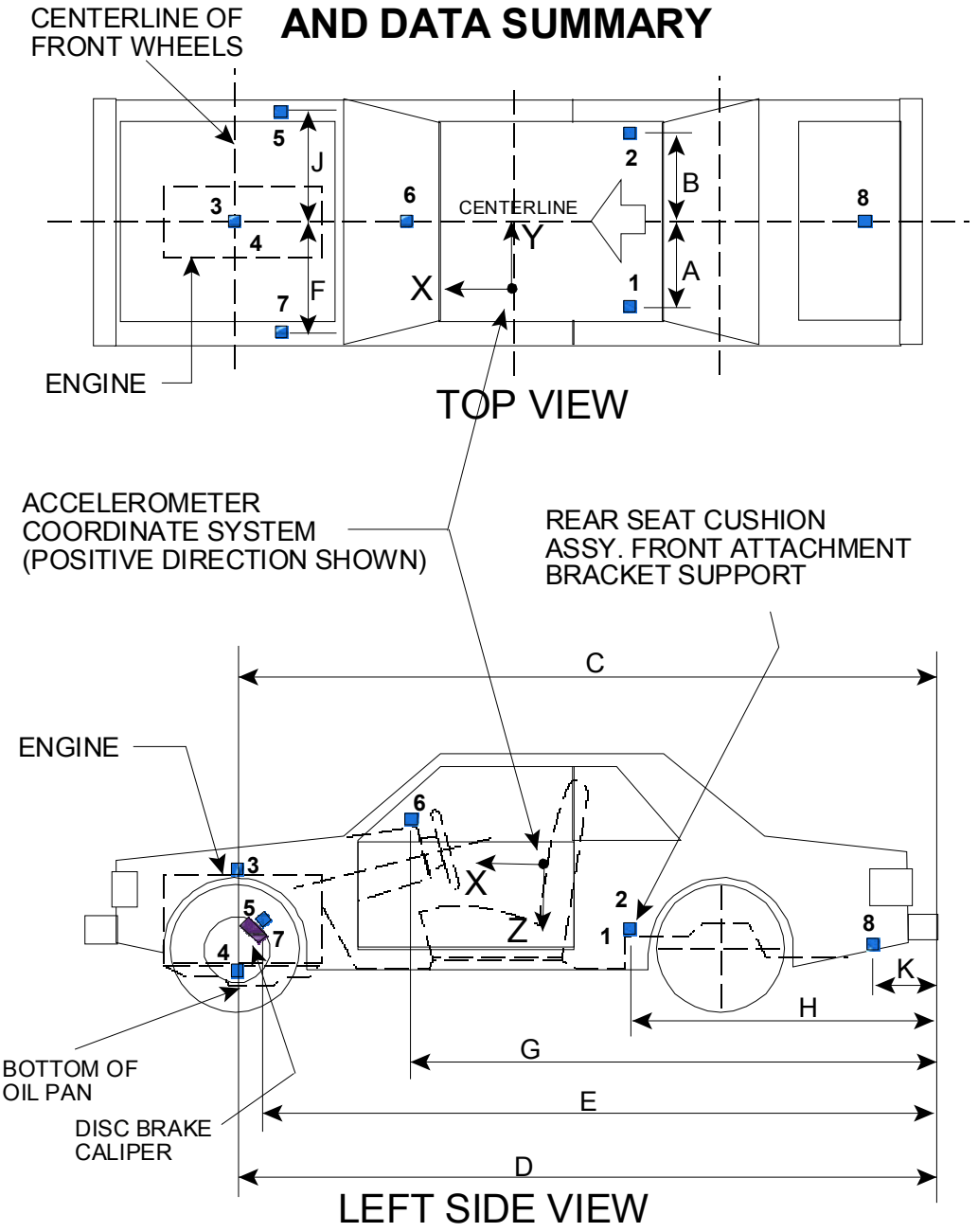
X	1.	Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the left front outboard seating position intersects the left rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
X	2.	Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the right front outboard seating position intersects the right rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
X	3.	Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect at the top of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
X	4.	Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect the bottom of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart
X	5.	Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart
X	6.	Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the top of the instrument panel. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart
X	7.	Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart
X	8.	Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the floor of the trunk. Install an accelerometer on the trunk floor at this intersection to record z-direction accelerations. Record the location on the following chart

REMARKS:

I certify that I have read and performed each instruction.

Signature: Nick Kosinski Date: 8/16/05

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



Dimensions Corresponding To The Letters “A” Through “K” (Excluding “I”) Are Recorded In The Table On The Following Page.
Accelerometers Corresponding To The Numbers 1 Through 8 Are Specified On The Preceding Page.

DATA SHEET 31
VEHICLE ACCELEROMETER LOCATION AND MEASUREMENTS

DIMENSION	LENGTH (mm)	
PRETEST VALUES		
A (LH Rear Seat Xmbr)	354	
B (RH Rear Seat Xmbr)	351	
C (Engine Top)	3709	
D (Engine Bottom)	3682	
E (Caliper)	Right Side 3675	Left Side 3672
F (Left Caliper)	615	
G (IP)	3040	
H (Seat)	1840	
J (Right Caliper)	615	
K (Trunk)	984	
POST TEST VALUES		
A (LH Rear Seat Xmbr)	350	
B (RH Rear Seat Xmbr)	353	
C (Engine Top)	3657	
D (Engine Bottom)	3708	
E (Caliper)	Right Side 3654	Left Side 3651
F (Left Caliper)	622	
G (IP)	3028	
H (Seat)	1840	
J (Right Caliper)	624	
K (Trunk)	983	

DATA SHEET 32

PHOTOGRAPHIC TARGETS

Test Vehicle: 2005 Toyota Corolla NHTSA No.: C55110
Test Program: FMVSS 208 Compliance Test Date: 8/16/05
Test Technician: Nick Kosinski

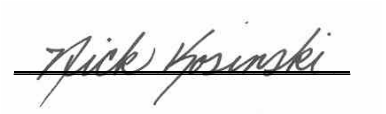
IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

X	1.	FMVSS 208 vehicle targeting requirements (See Figures 28A and 28B)
X	1.1	Targets A1 and A2 are on flat rectangular panels.
X	1.2	Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the front on the outboard sides of A1 and A2. The center of each circular target is 100 mm from the one next to it.
X		Distance between targets (mm): 100 mm
X	1.3	Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the back on the outboard sides of on A1 and A2. The center of each circular target is 100 mm from the one next to it.
X		Distance between targets (mm): 100 mm
X	1.4	The distance between the first circular target at the front of A1 and A2 and the last circular target at the back of A1 and A2 is at least 915 mm.
X		Distance between the first and last circular targets (mm): 915 mm
X	1.5	Firmly fix target A1 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy.
X	1.6	Firmly fix target A2 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
X	1.7	Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the driver door. The centers of each circular target are at least 610 mm apart.
X		Distance between targets (mm): 613 mm
X	1.8	Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the passenger door. The centers of each circular target are at least 610 mm apart.
X		Distance between targets (mm): 614 mm
X	1.9	Place tape with squares having alternating colors on the top portion of the steering wheel.
X	1.10	Chalk the bottom portion of the steering wheel
X	1.11	Is this an offset test?
		Yes, continue with this section
X		No, go to 2.
	1.12	Measure the width of the vehicle.
		Vehicle width (mm):

	1.13	Find the centerline of the vehicle. (½ of the vehicle width)
	1.14	Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.
	1.15	Apply 25 mm wide tape with alternating black and yellow squares parallel to and on each side of the line found in 1.14. The edge of each tape shall be 50 mm from the line found in 1.14. The tape shall extend from the bottom of the bumper to the front edge of the windshield. (Figure 28D
X	2.	Barrier Targeting
X	2.1	Fix two stationary targets D1 and D2 to the barrier as shown in the Figure 28A. One target is in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy. The other is in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy
X	2.2	Targets D1 and D2 are on a rectangular panel.
X	2.3	Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted on the sides of the rectangular panel away from the longitudinal centerline of the vehicle. The center of each circular target is 100 mm from the one next to it.
X		Distance between circular targets on D1 (mm): 100 mm
X		Distance between circular targets on D2 (mm): 100 mm
X	3.	FMVSS 208 Dummy Targeting Requirements
X	3.1	Place a circular target with black and yellow quadrants on both sides of the driver dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
X	3.2	Place a circular target with black and yellow quadrants on both sides of the passenger dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
X	3.3	Place a circular target with black and yellow quadrants on the outboard shoulder of the driver dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
X	3.4	Place a circular target with black and yellow quadrants on the outboard shoulder of the passenger dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
X	4.	FMVSS 204 Targeting Requirements
X	4.1	Is an FMVSS 204 indicant test ordered on the “COTR Vehicle Work Order?”
		Yes, continue with this form.
X		No, this form is complete.
	4.2	Resection panel (Figure 28C)
	4.2.1	The panel deviates no more than 6 mm from perfect flatness when suspended vertically
	4.2.2	The 8 targets on the panel are circular targets at least 90 mm in diameter and with black and yellow quadrants.
	4.2.3	The center of each of the 4 outer targets are placed within 1 mm of the corners of a square measuring 914 mm on each side.
	4.2.4	Locate another square with 228 mm sides and with the center of this square coincident with the center of the 914 mm square.
	4.2.5	The center of the 4 inner targets are placed at the midpoints of each of the 228 mm sides.

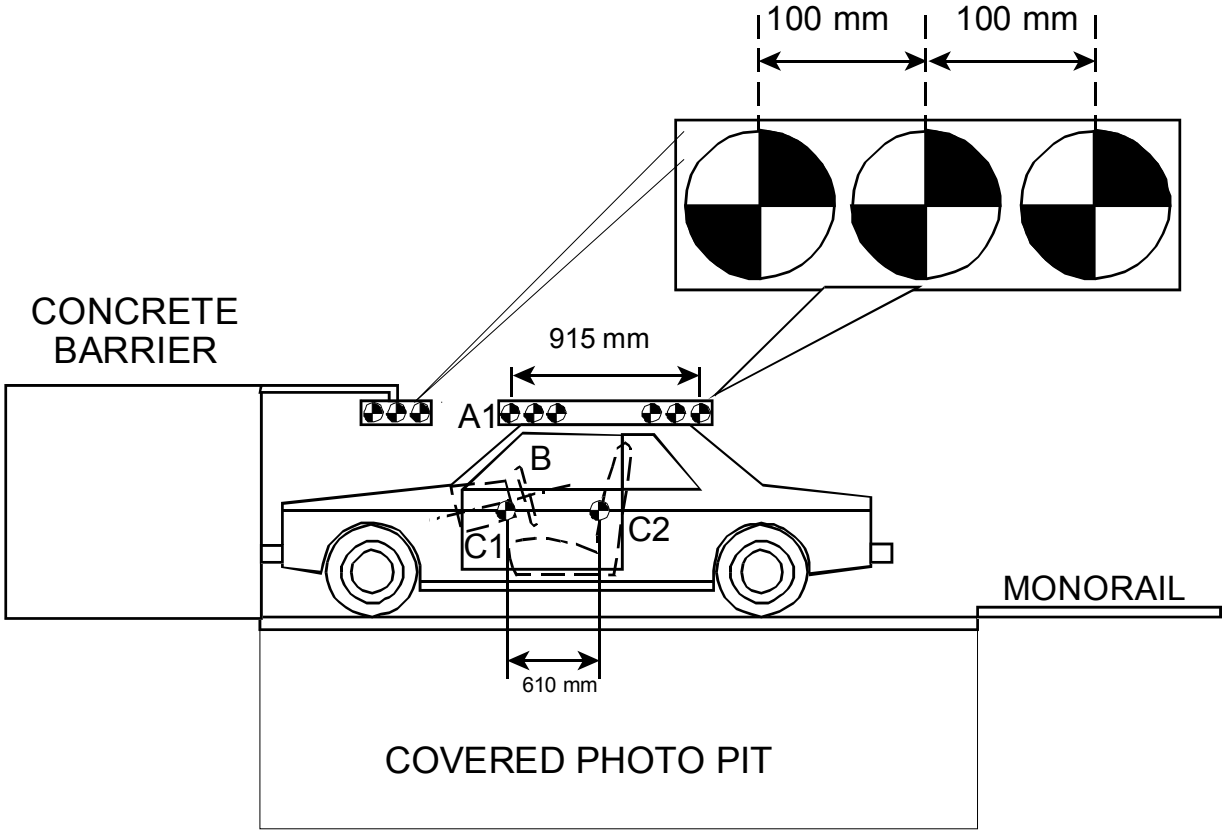
	4.3	Place a circular target at least 90 mm in diameter and with black and yellow quadrants on a material (cardboard, metal, etc.) that can be taped to the top of the steering column.
	4.4	Tape the target from 4.3 to the top of the steering column in a manner that does not interfere with the movement of the steering column in a crash

I certify that I have read and performed each instruction.

Signature: 

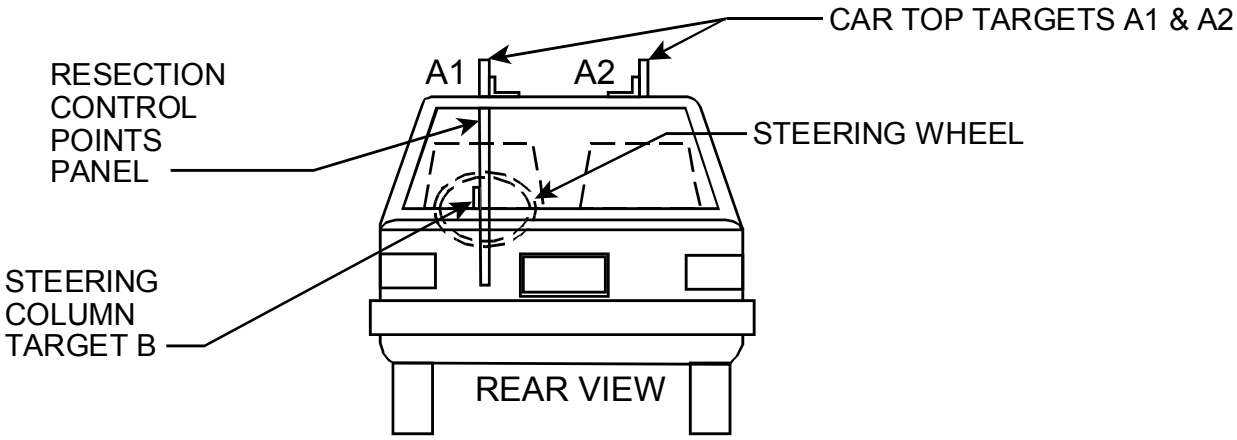
Date: 8/16/05

REFERENCE PHOTO TARGETS

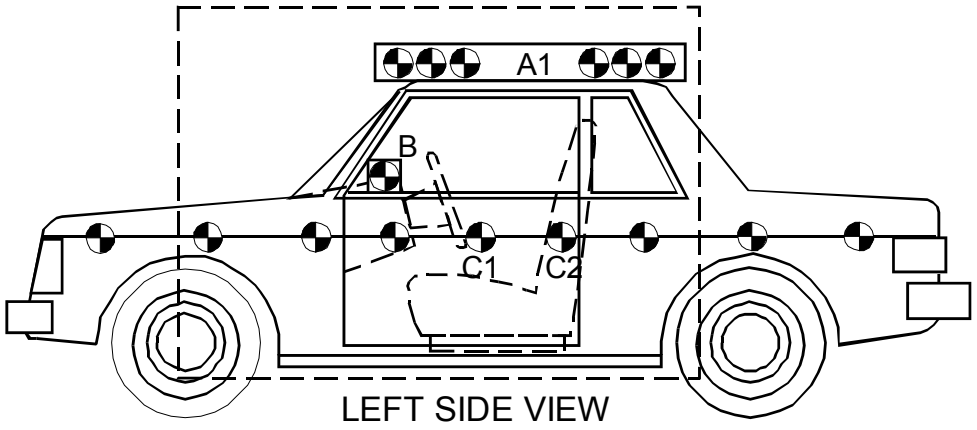


LEFT SIDE VIEW

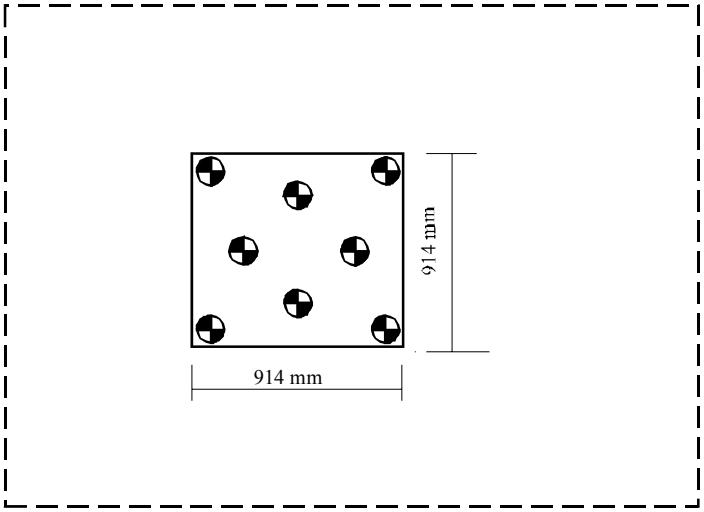
RESECTION PANEL TARGETING ALIGNMENT



TEST RUN STEERING COLUMN CAMERA VIEW OF TYPICAL TIME ZERO VEHICLE POSITION



PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW



LEFT SIDE VIEW

DATA SHEET 33

CAMERA LOCATIONS

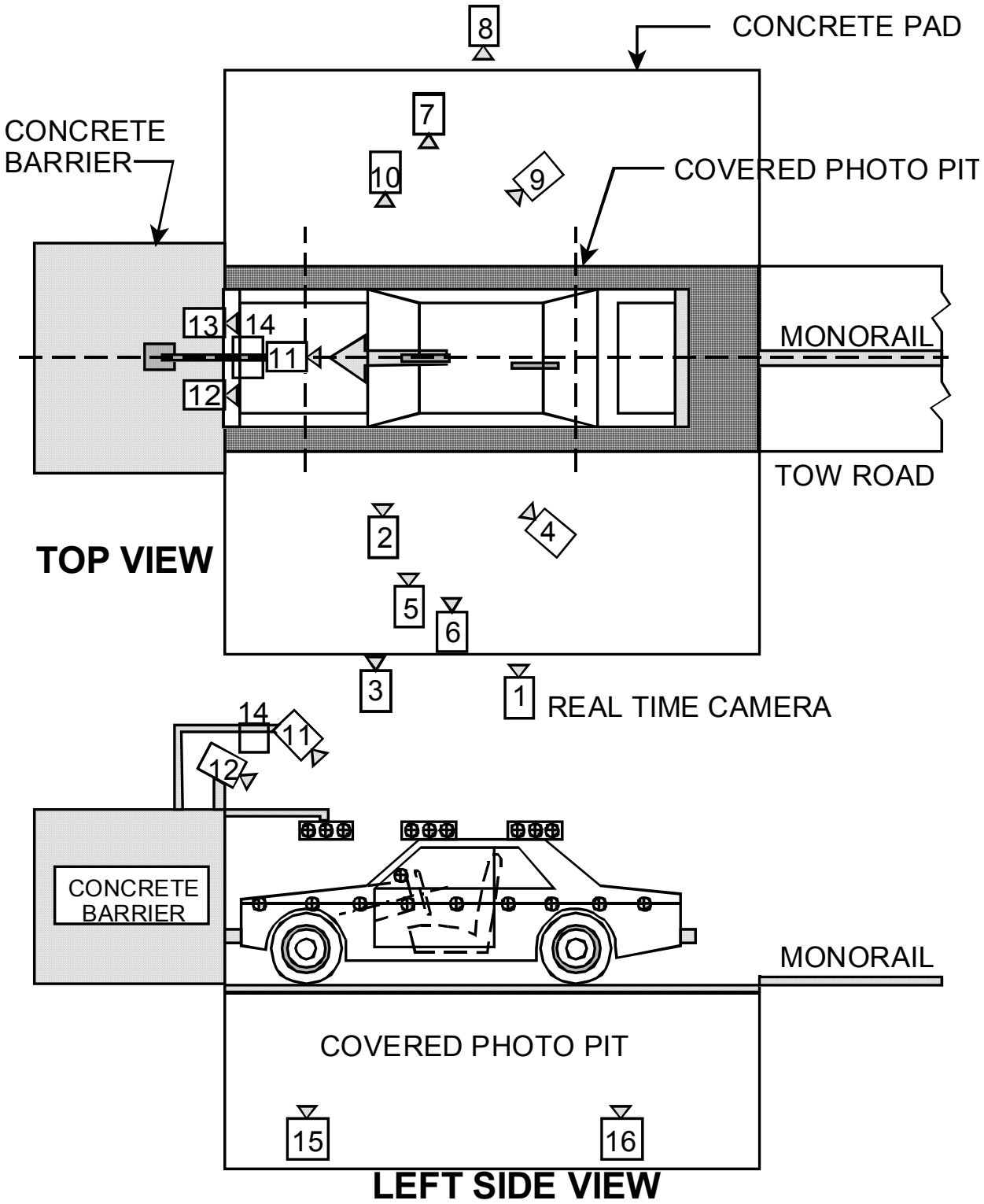
Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance

NHTSA No.: C55110
Test Date: 8/16/05
Time: 10:43 am

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			LENS (mm)	SPEED (fps)
		X	Y	Z		
1	Real Time Left Side View				13	24
2	Left Side View (Barrier face to front seat backs)	1150	-5270	1345	25	1000
3	Left Side View (Driver)	1710	-6740	1225	35	1000
4	Left Side View (B-post aimed toward center of steering wheel)	6805	-5150	2085	50	1000
5	Left Side View (Steering Column)	1930	-6220	1570	24	1000
6	Left Side View (Steering Column)	1900	-6230	1040	25	1000
7	Right Side View (Overall)	2110	7650	1360	24	1000
8	Right Side View (Passenger)	1580	6670	1495	35	1000
9	Right Side View (Angle)	6615	4415	2170	50	1000
10	Right Side View (Front door)	1085	5330	1470	24	1000
11	Front View Windshield	-330	0	2730	14	1000
12	Front View Driver	240	-310	2070	12.5	1000
13	Front View Passenger	245	315	2060	12.5	1000
14	Overhead Barrier Impact View	945	0	5050	19	1000
15	Pit Camera Engine View	1000	0	-3150	24	1000
16	Pit Camera Fuel Tank View	3225	0	-3150	24	1000

*COORDINATES:
+X - forward of impact plane
+Y - right of monorail centerline
+Z - above ground level

CAMERA POSITIONS FOR FMVSS 208



DATA SHEET 34

APPENDIX F
DUMMY POSITIONING PROCEDURES
FOR DRIVER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

Test Vehicle: 2005 Toyota Corolla NHTSA No.: C55110
Test Program: FMVSS 208 Compliance Test Date: 8/16/05
Test Technician: Eric Peschman

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

_X_ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A – No lumbar adjustment

_X_ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S20.1.8.2)
X N/A – No additional support adjustment

_X_ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S20.1.9.3)
X N/A – No independent fore-aft seat cushion adjustment

_X_ 4. Use the seat markings determined during the completion of Data Sheet 14 to set the mid-fore-aft position, full down height position and the seat cushion angle. (S8.1.2)

_X_ 5. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

__N/A – No seat back angle adjustment
Manufacturer's design seat back angle 88.3° on HRP
Tested seat back angle 88.3° on HRP

_X_ 6. If adjustable, set the head restraint at the full up and full forward position. Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible. (S8.1.3)
__N/A – No head restraint adjustment

_X_ 7. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
__N/A – No adjustable upper seat belt anchorage
Manufacturer's specified anchorage position. 2nd Down
Tested anchorage position 2nd Down (Unbelted Test)

_X_ 8. Place the adjustable accelerator pedal in the full forward position.
X N/A – the accelerator pedal is not adjustable.

X 9. Set the steering wheel hub at the geometric center of the full range of driving positions including any telescoping positions as determined in data sheet 14.

X 10. Place the dummy in the seat such that the midsagittal plane is coincident with the longitudinal seat cushion markings as determined in item 1.18 of Data Sheet 14 and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)

X 11. Rest the thighs on the seat cushion. (S10.5)

X 12. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage.

Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
.279 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
.309 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
23.1° pelvic angle (20^o to 25^o)

X 13. Is the head level within $\pm$ 0.5^o? (S10.1)
X Yes, go to 14
__No, go to 13.1

__13.1 Adjust the position of the H-point. (S10.1)

__13.2 Is the head level within $\pm$ 0.5^o? (S10.1)
__Yes, record the following, then go to 15. __No, go to 13.3
____horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____pelvic angle (20^o to 25^o) (S10.4.2.2)

__13.3 Adjust the pelvic angle. (S10.1)

__13.4 Is the head level within $\pm$ 0.5^o? (S10.1)
__Yes, record the following, then go to 14. __No, go to 13.5
____horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____pelvic angle (20^o to 25^o) (S10.4.2.2)

__13.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within ± 0.5°. (S10.1)
Record the following, then go to 14
____horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____pelvic angle (20° to 25°) (S10.4.2.2)

X 14. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
10.6" measured distance (10.6 inches) (S10.5)

X 15. Can the right foot be placed on the accelerator?
X Yes, go to 15.1 and skip 15.2
__No, go to 15.2

X 15.1. To the extent practicable keep the right thigh and the leg in a vertical plane (S10.5) while resting the foot on the undepressed accelerator pedal with the rearmost point of the heel on the floor pan in the plane of the pedal. (S10.6.1.1)

__15.2 Initially set the foot perpendicular to the leg and then place it as far forward as possible in the direction of the pedal centerline with the rearmost point of the heel resting on the floor pan. (S10.6.1.1)

__15.2.1 Move the adjustable pedal to its most rearward position or until the right foot is flat on the pedal, whichever occurs first. (S10.6.1.1)
__N/A – the accelerator pedal is not adjustable

X 16. Does the vehicle have a foot rest?
X Yes, go to 16.1
__No, go to 16.2

X 16.1 With the left thigh and leg in a vertical plane, place the foot on the foot rest with the heel resting on the floor pan. (S10.6.1.2)

X 16.1.1 Is the left foot elevated above the right foot?
__Yes, go to 16.1.2 and position the foot off the foot rest
X No, go to 17

__16.1.2 Check the ONLY one of the following that applies

__The foot reaches the toeboard without adjusting the foot or leg. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard, skip 16.1.3 (S10.6.1.2)

__The foot reaches the toeboard but contacts the brake or clutch pedal and must be rotated to avoid pedal contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard. The foot was rotated about the leg to avoid pedal contact, skip 16.1.3 (S10.6.1.2)

__The foot reaches the toeboard but contacts the brake or clutch pedal and the foot and leg must be rotated to avoid pedal contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5) and place the foot on the toeboard. The foot was rotated about the leg and the leg was rotated outboard about the hip the minimum distance necessary to avoid pedal contact, skip 16.1.3 (S10.6.1.2)

__N/A – the foot does not reach the toeboard, go to 16.1.3

__16.1.3 Check the ONLY one of the following that applies

__The foot did not contact the brake or clutch pedal. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5). Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan. (S10.6.1.2)

__The foot did contact the brake or clutch pedal and the foot was rotated to avoid contact. To the extent practicable keep the left thigh and the leg in a vertical longitudinal plane (S10.5). Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan and rotate the foot the minimum amount to avoid pedal contact. (S10.6.1.2)

__The foot did contact the brake or clutch pedal and the foot was rotated about the leg and the leg was rotated outboard about the hip the minimum distance necessary to avoid pedal contact. Set the foot perpendicular to the leg and place it as far forward as possible with the heel resting on the floor pan and rotate the foot about the leg and the thigh and leg outboard about the hip the minimum distance necessary to avoid pedal contact. (S10.6.1.2)

X 17. Place the right upper arm adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)

X 18. Is the driver seat belt used for this test?
__Yes, continue
X No, go to 19

__18.1 Fasten the seat belt around the dummy.

__18.2 Remove all slack from the lap belt portion. (S10.9)

__18.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)

__18.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
____pound load applied

__18.5 Is the belt system equipped with a tension-relieving device?
__Yes, continue
__No, go to 19

__18.6 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).

X 19. Place the left upper arm adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)

X 20. Place the right hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)

X 21. Place the left hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)

X 22. Tape the thumb of each hand to the steering wheel by using masking tape with a width of 0.25 inch. The length of the tape shall only be enough to go around the thumb and steering wheel one time.

REMARKS:

I certify that I have read and performed each instruction.

Signature: _____ Date: 8/16/05

APPENDIX F
DUMMY POSITIONING PROCEDURES FOR PASSENGER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

Test Vehicle: 2005 Toyota Corolla NHTSA No.: C55110
Test Program: FMVSS 208 Compliance Test Date: 8/16/05
Test Technician: Wayne Dahlke

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

X 1. The seat is a bench seat for which the adjustments have already been made for the driver and there are no independent adjustments that can be made for the passenger. Go to 7.
X N/A- the passenger seat adjusts independently of the driver seat.

X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A – No lumbar adjustment

X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S20.1.8.2)
X N/A – No additional support adjustment

X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S20.1.9.3)
X N/A – No independent fore-aft seat cushion adjustment

X 5. Use the seat markings determined during the completion of Data Sheet 14 to set the mid-fore-aft position, full down height position and the seat cushion angle. (S8.1.2)

X 6. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

__N/A – No seat back angle adjustment
Manufacturer's design seat back angle 89.0° on HRP
Tested seat back angle 88.6° on HRP

X 7. If adjustable, set the head restraint at the full up and full forward position. Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible. (S8.1.3)
__N/A – No head restraint adjustment

X 8. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
__N/A – No adjustable upper seat belt anchorage
Manufacturer's specified anchorage position. 2nd Down
Tested anchorage position 2nd Down (Unbelted Test)
__ N/A - the seat does not have a fore-aft adjustment

X 9. Place the dummy in the seat such that the midsagittal plane is coincident with the longitudinal seat cushion markings as determined in item 2.19 of Data Sheet 14 and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)

X 10. Rest the thighs on the seat cushion. (S10.5)

X 11. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage.

Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
.123 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
.114 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
22.8° pelvic angle (20^o to 25^o)

X 12. Is the head level within $\pm$ 0.5^o? (S10.1)
__Yes, go to 13
X No, go to 12.1

X 12.1 Adjust the position of the H-point. (S10.1 and S10.4.2.1)

X 12.2 Is the head level within $\pm$ 0.5^o? (S10.1)
__Yes, record the following, then go to 13. X No, go to 12.3
____horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____pelvic angle (20^o to 25^o) (S10.4.2.2)

X 12.3 Adjust the pelvic angle. (S10.1)

X 12.4 Is the head level within $\pm$ 0.5^o? (S10.1)
__Yes, record the following, then go to 13. X No, go to 12.5
____horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
____pelvic angle (20^o to 25^o) (S10.4.2.2)

X 12.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within ± 0.5°. (S10.1)
Record the following, then go to 13 (The neck bracket was moved four notches)
.110 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
.201 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
23.0°pelvic angle (20° to 25°) (S10.4.2.2)

X 13. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
10.7" measured distance (10.6 inches) (S10.5)

X 14. Check the only one of the following that applies:

X To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, place the feet on the toeboard with the heels resting on the floor pan as close as possible to the intersection of the floor pan and toeboard.

__The feet cannot be placed flat on the toeboard. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heels resting on the floor pan.

__The vehicle has a wheelhouse projection. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heels resting on the floor pan. Do not set the feet on the wheelhouse projection.

__The vehicle has a wheelhouse projection and the feet cannot be placed on the toeboard. To the extent practicable keep the left thigh and leg in a vertical plane and the right thigh and leg in a vertical plane, set the feet perpendicular to the legs and place them as far forward as possible with the heel resting on the floor pan. . Do not set the feet on the wheelhouse projection.

X 15. Place the left upper arm in contact with the seat back and side of the torso. (S10.2.2)

X 16. Is the passenger seat belt used for this test?
__Yes, continue
X No, go to 17

__16.1 Fasten the seat belt around the dummy.

__16.2 Remove all slack from the lap belt portion. (S10.9)

__16.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)

__16.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
____pound load applied

__16.5 Is the belt system equipped with a tension relieving device?
__Yes, continue
__No, go to 17

__16.6 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 17.

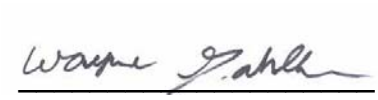
X 17. Place the right upper arm in contact with the seat back and side of the torso. (S10.2.2)

X 18. Place the left hand palm in contact with the outside of the left thigh and the little finger in contact with the seat cushion. (S10.3.2)

X 19. Place the right hand palm in contact with the outside of the right thigh and the little finger in contact with the seat cushion. (S10.3.2)

REMARKS:

I certify that I have read and performed each instruction.

Signature:  Date: 8/16/05

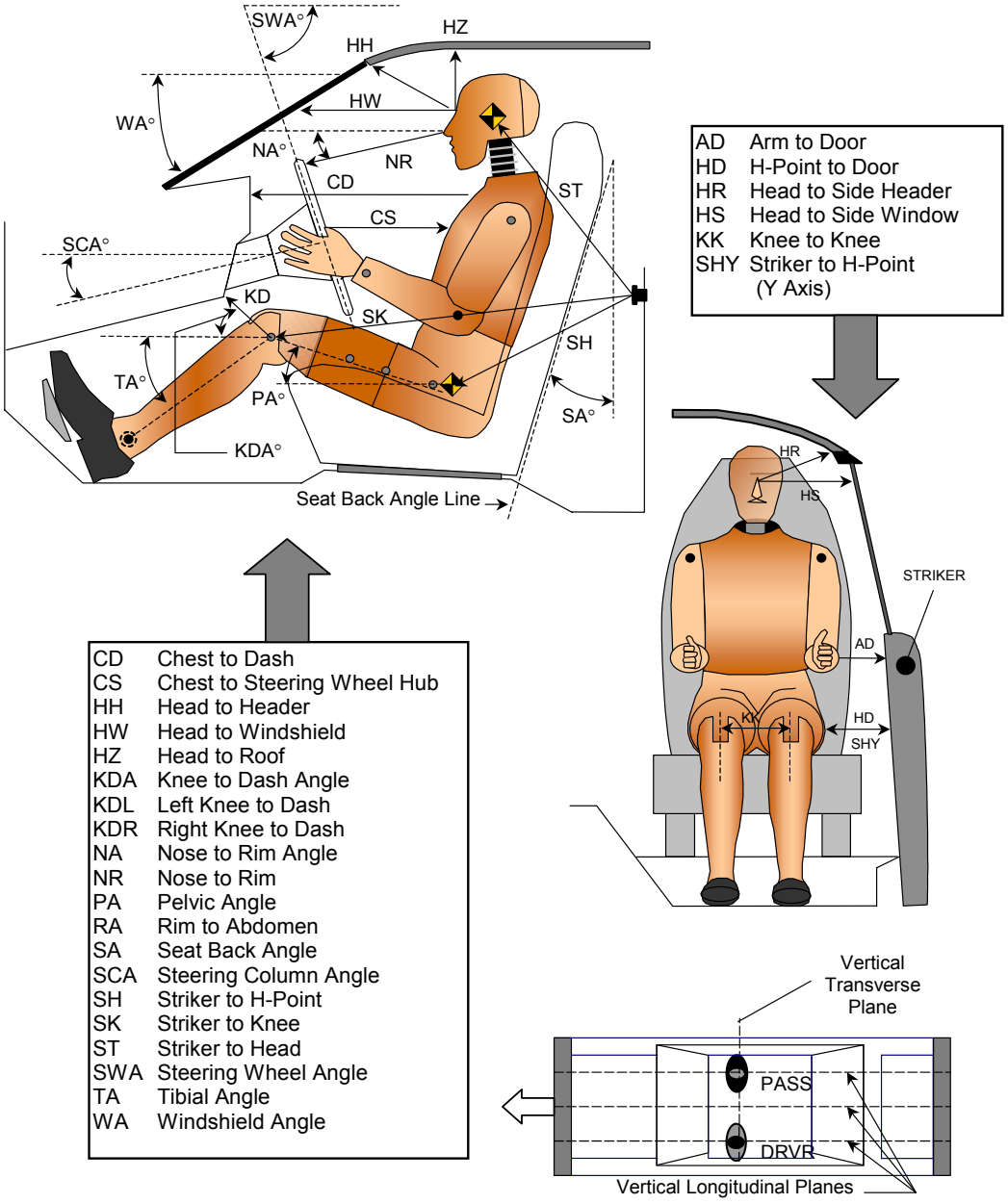
DATA SHEET 35

DUMMY MEASUREMENTS

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Eric Peschman

NHTSA No.: C55110
Test Date: 8/16/05

DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS



DATA SHEET 35

DUMMY MEASUREMENTS

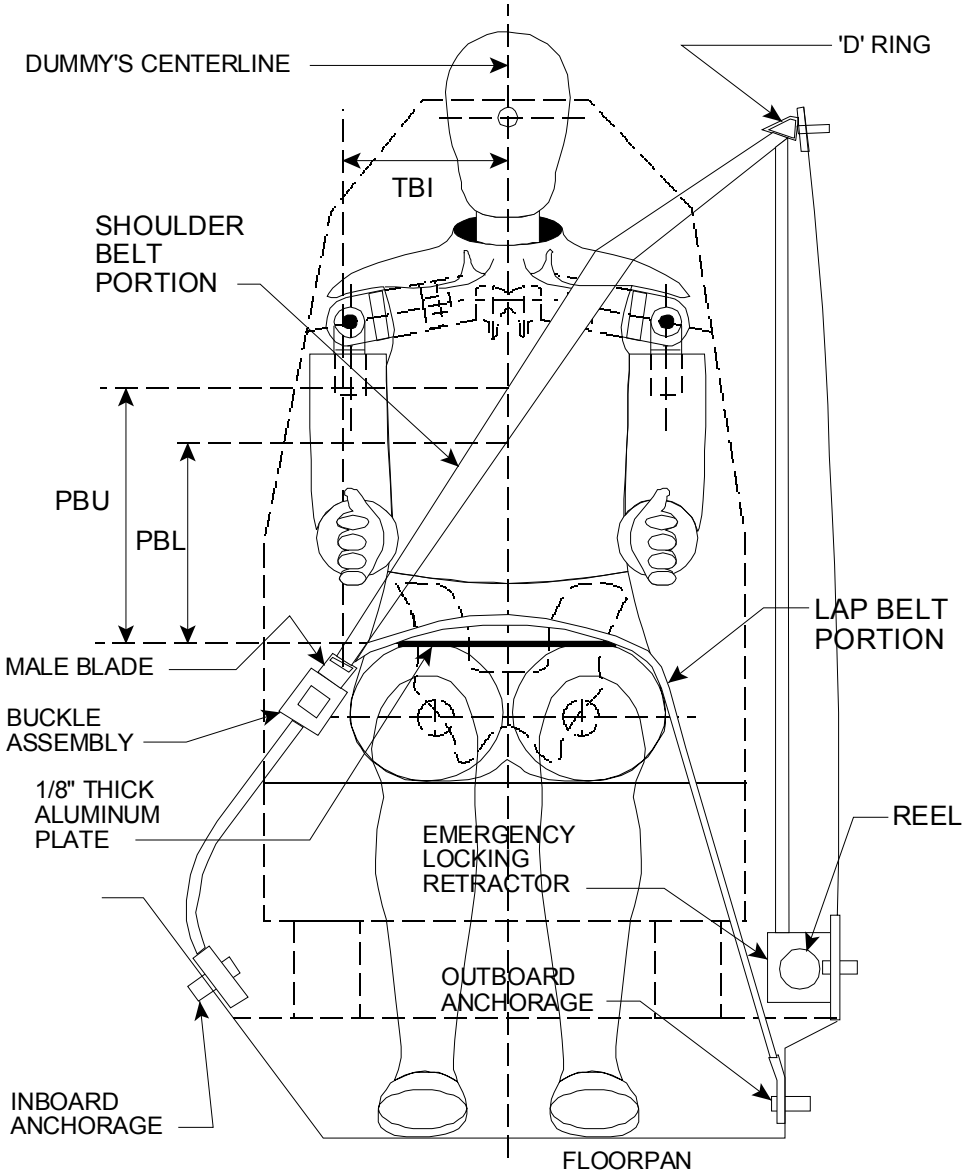
Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Eric Peschman

NHTSA No.: C55110
Test Date: 8/16/05

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver SN 401		Passenger SN 403	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		26.9		
SWA	Steering Wheel Angle		62.1		
SCA	Steering Column Angle		28.1		
SA	Seat Back Angle (On Headrest)		1.7		1.4
HZ	Head to Roof (Z)	202		161	
HH	Head to Header	337	22.5	298	22.9
HW	Head to Windshield	621	0.0	533	0.0
HR	Head to Side Header (Y)	203		180	
NR	Nose to Rim	436	11.7		
CD	Chest to Dash	547		511	
CS	Chest to Steering Hub	363	11.4		
RA	Rim to Abdomen	202	0.0		
KDL	Left Knee to Dash	147	25.8	120	
KDR	Right Knee to Dash	132		140	27.4
PA	Pelvic Angle		23.1		23.0
TA	Tibia Angle		56.8		51.1
KK	Knee to Knee (Y)	311		273	
SK	Striker to Knee	592	101.8	606	102.0
ST	Striker to Head	405	8.6	474	16.3
SH	Striker to H-Point	315	134.0	298	134.1
SHY	Striker to H-Point (Y)	239		228	
HS	Head to Side Window	311		276	
HD	H-Point to Door (Y)	151		135	
AD	Arm to Door (Y)	96		93	
AA	Ankle to Ankle	306		189	

SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
PBU - Top surface of reference to belt upper edge	mm	N/A	N/A
PBL - To surface of reference to belt lower edge	mm	N/A	N/A

DATA SHEET 36

CRASH TEST

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Eric Peschman

NHTSA No.: C55110
Test Date: 8/16/05

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

X 1. Vehicle underbody painted
X 2. The speed measuring devices are in place and functioning.
X 3. The speed measuring devices are 1.0 m from the barrier (spec. 1.5m) and 30 cm from the barrier (spec. is 30 cm)
X 4. Convertible top is in the closed position.
X N/A, not a convertible
X 5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected.
X 6. Tires inflated to pressure on tire placard or if it does not have a tire placard because it is not a passenger car, then inflated to the tire pressure specified in the owner information.

210 kpa front left tire	210 kpa specified on tire placard or in owner information
210 kpa front right tire	210 kpa specified on tire placard or in owner information
210 kpa rear left tire	210 kpa specified on tire placard or in owner information
210 kpa rear right tire	210 kpa specified on tire placard or in owner information

X 7. Time zero contacts on barrier in place.
X 8. Pre test zero and shunt calibration adjustments performed and recorded
X 9. Dummy temperature meets requirements of section 12.2 of the test procedure.
X 10. Vehicle hood closed and latched
X 11. Transmission placed in neutral
X 12. Parking brake off
X 13. Ignition in the ON position
X 14. Doors closed and latched but not locked
X 15. Posttest zero and shunt calibration checks performed and recorded
X 16. Actual test speed 39.9 kmph
X 17. Vehicle rebound from the barrier 123 cm
X 18. Describe whether the doors open after the test and what method is used to open the doors.

X Left Front Door: Door remained closed and latched; Door opened without tools
X Right Front Door: Door remained closed and latched; Door opened without tools
X Left Rear Door: Door remained closed and latched; Door opened without tools
X Right Rear Door: Door remained closed and latched; Door opened without tools

X 19. Describe the contact points of the dummy with the interior of the vehicle.

X Driver Dummy: Head to Windshield, Air Bag and Headrest; Chest to Air Bag; Knees to Knee Bolster and Steering Column

X Passenger Dummy: Head to Windshield, Air Bag, and Headrest; Chest to Air Bag; Knees to Glove Box and Dash

REMARKS:

I certify that I have read and performed each instruction.

Signature:  Date: 8/16/05

DATA SHEET NO. 38

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Nick Kosinski

NHTSA No.: C55110
Test Date: 8/16/05

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

Vehicle Year/Make/Model/Body Style:	2005 Toyota Corolla Passenger Car
VIN:	JTDBR32E652050860
Wheelbase:	2605 mm
Build Date:	06/04
Vehicle Size Category:	3
Test Weight:	1364.5 kg
Front Overhang:	915 mm
Overall Width:	1698 mm
Overall Length Center:	4497 mm

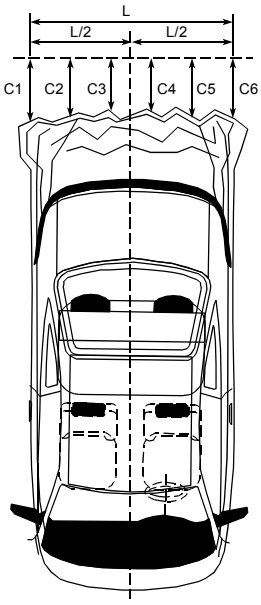
Accelerometer Data	
Location:	As per measurements on Data Sheet 31
Linearity:	>99.9%

Integration Algorithm:	Trapezoidal
Vehicle Impact Speed:	39.9 kmph
Time of Separation:	97.0 ms
Velocity Change:	44.3 kmph

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
Midpoint of Damage: Vehicle Longitudinal Centerline
Damage Region Length (mm): 1530
Impact Mode: Frontal Barrier

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4302	4064	238
C2	Crush zone 2 at left side	mm	4427	4094	333
C3	Crush zone 3 at left side	mm	4481	4075	406
C4	Crush zone 4 at right side	mm	4482	4058	424
C5	Crush zone 5 at right side	mm	4425	4089	336
C6	Crush zone 6 at right side	mm	4295	4075	220



REMARKS:

I certify that I have read and performed each instruction.

Signature: Nick Kosinski

Date: 8/16/05

DATA SHEET 39

WINDSHIELD MOUNTING (FMVSS 212)

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Nick Kosinski

NHTSA No.: C55110
Test Date: 8/16/05

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

1. Pre-Crash

[X] 1.1 Describe from visual inspection how the windshield is mounted and describe any trim material.

Retained with glue
Rubber trim

[X] 1.2 Mark the longitudinal centerline of the windshield

[X] 1.3 Measure pre-crash A, B, and C for the left side and record in the chart below.

[X] 1.4 Measure pre-crash C, D, and E for the right side and record in the chart below.

[X] 1.5 Measure from the edge of the retainer or molding to the edge of the windshield.

[X] Dimension G (mm): 15 mm

2. Post Crash

[X] 2.1 Can a single thickness of copier type paper (as small a piece as necessary) slide between the windshield and the vehicle body?

[X] No – Pass. Skip to the table of measurements, complete it by repeating the pre-crash measurements in the post crash column, and calculate the retention percentage, which will be 100%.

[ ] Yes, go to 2.2

[ ] 2.2 Visibly mark the beginning and end of the portions of the periphery where the paper slides between the windshield and the vehicle body.

[ ] 2.3 Measure and record post-crash A, B, C, D, E, and F such that the measurements do not include any of the parts of the windshield where the paper slides between the windshield and the vehicle body.

[ ] 2.4 Calculate and record the percent retention for the right and left side of the windshield.

[ ] 2.5 Is total right side percent retention less than 75%?

[ ] Yes, Fail

[ ] No, Pass

[ ] 2.6 Is total left side percent retention less than 75%?

[ ] Yes, Fail

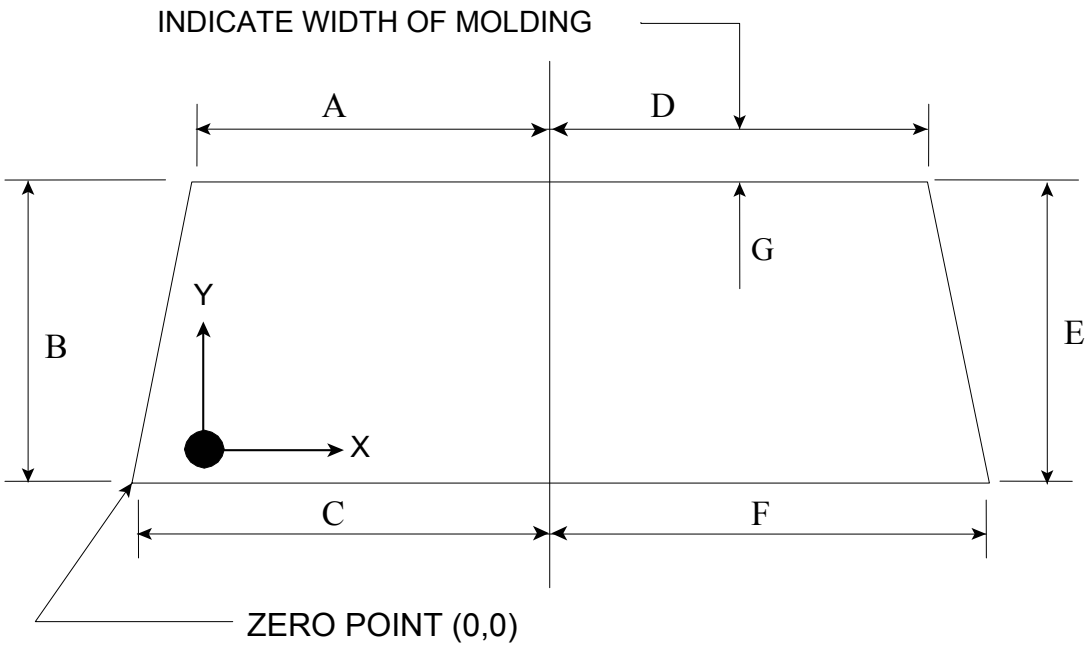
[ ] No, Pass

WINDSHIELD RETENTION MEASUREMENTS

	Dimension	Pre-Crash (mm)	Post-Crash (mm)	Percent Retention (Post-Test ÷ Pre-Crash)
Left Side	A	541	541	100%
	B	836	836	100%
	C	693	693	100%
	Total	2070	2070	100%
Right Side	D	541	541	100%
	E	836	836	100%
	F	693	693	100%
	Total	2070	2070	100%

Indicate area of mounting failure. NONE

FRONT VIEW OF WINDSHIELD



REMARKS:

I certify that I have read and performed each instruction.

Signature: Nick Kosinski

Date: 8/16/05

DATA SHEET 40

WINDSHIELD ZONE INTRUSION (FMVSS 219)

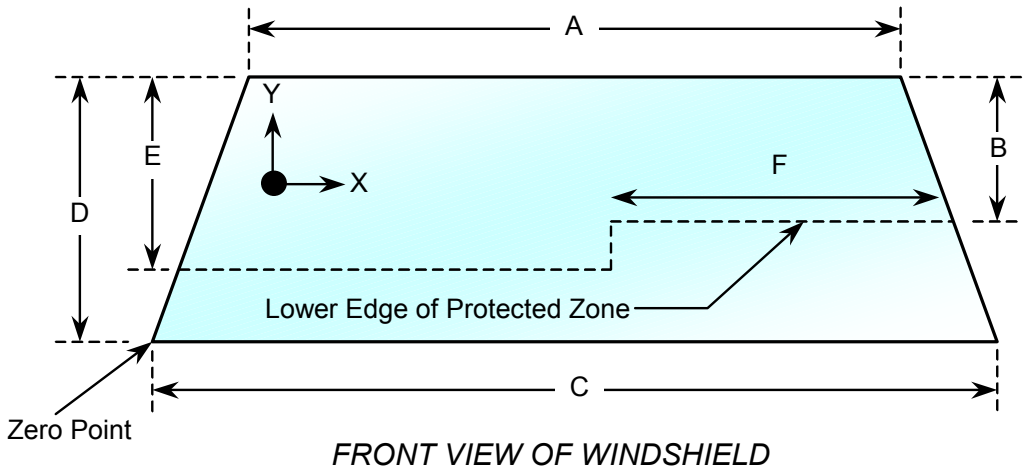
Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Nick Kosinski

NHTSA No.: C55110
Test Date: 8/16/05

IMPACT ANGLE:	Zero Degrees		
BELTED DUMMIES (YES/NO):	No		
TEST SPEED:	_X_ 32 to 40 kmph	__ 0 to 48 kmph	__ 0 to 56 kmph
DRIVER DUMMY:	__ 5th female	_X_ 50th male	
PASSENGER DUMMY:	__ 5th female	_X_ 50th male	

X	1.	Place a 165 mm diameter rigid sphere, with a mass of 6.8 kg on the instrument panel so that it is simultaneously touching the instrument panel and the windshield. (571.219 S6.1(a))
X	2.	Roll the sphere from one side of the windshield to the other while marking on the windshield where the sphere contacts the windshield. (571.219 S6.1(b))
X	3.	From the outermost contactable points on the windshield draw a horizontal line to the edges of the windshield. (571.219 S6.1(b))
X	4.	Draw a line on the inner surface of the windshield that is 13 mm below the line determined in items 2 and 3
X	5.	After the crash test, record any points where a part of the exterior of the vehicle has marked, penetrated, or broken the windshield.

Provide all dimensions necessary to reproduce the protected area.



FRONT VIEW OF WINDSHIELD

WINDSHIELD DIMENSIONS

Item	Units	Value
A	mm	1082
B	mm	504
C	mm	1385
D	mm	836
E	mm	551
F	mm	500

AREA OF PROTECTED ZONE FAILURES:

B. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one which is normally in contact with the windshield.

X	Y
NONE	

C. Provide coordinates of the area beneath the protected zone template that the inner surface of the windshield was penetrated by a vehicle component.

X	Y
NONE	

REMARKS:

I certify that I have read and performed each instruction.

Signature: Nick Kosinski Date: 8/16/05

DATA SHEET 41

FUEL SYSTEM INTEGRITY (FMVSS 301)

Test Vehicle: 2005 Toyota Corolla
Test Program: FMVSS 208 Compliance
Test Technician: Eric Peschman

NHTSA No.: C55110
Test Date: 8/16/05

TYPE OF IMPACT:	25 mph Unbelted Flat Frontal

Stoddard Solvent Spillage Measurements

A. From impact until vehicle motion ceases: 0.0 grams
(Maximum Allowable = 28 grams)

B. For the 5 minute period after motion ceases: 0.0 grams
(Maximum Allowable = 142 grams)

C. For the following 25 minutes: 0.0 grams
(Maximum Allowable = 28 grams/minute)

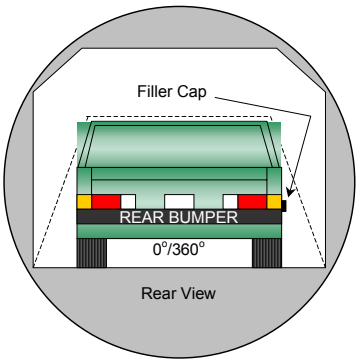
D. Spillage: NONE

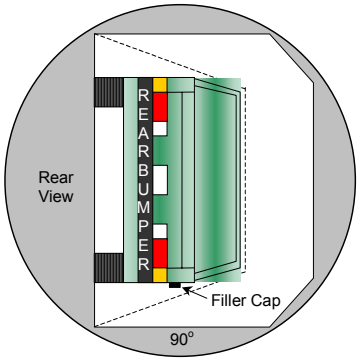
REMARKS: NO SPILLAGE

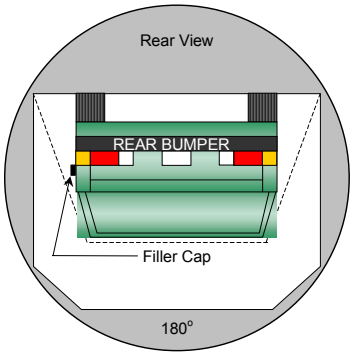
DATA SHEET NO. 41

FMVSS 301 STATIC ROLLOVER DATA

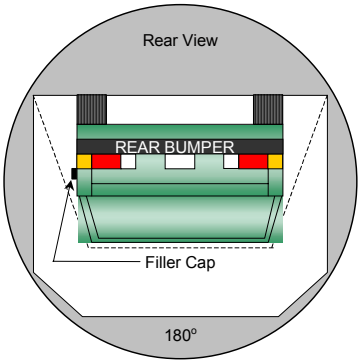
Test Vehicle: 2005 Toyota Corolla NHTSA No.: C55110
Test Program: FMVSS 208 Compliance Test Date: 8/16/05

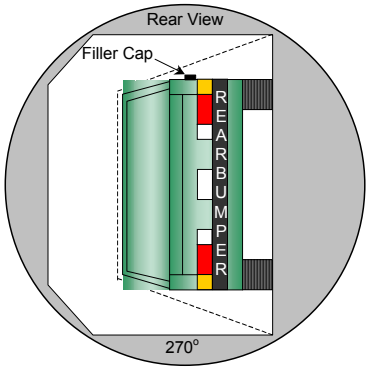


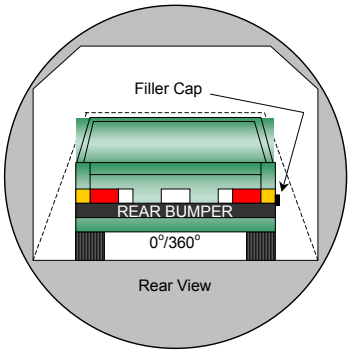




0° to 90° 90° to 180°







180° to 270° 270° to 360°

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations: **The post test FMVSS 301 rollover was not conducted at direction of the COTR.**

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (grams)
0° to 90°			
90° to 180°			
180° to 270°			
270° to 360°			

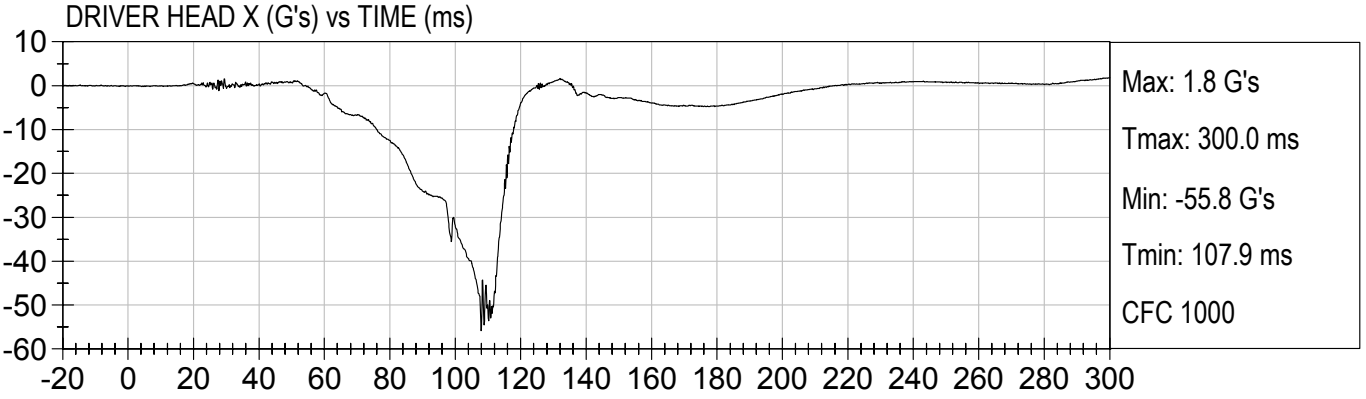
APPENDIX A

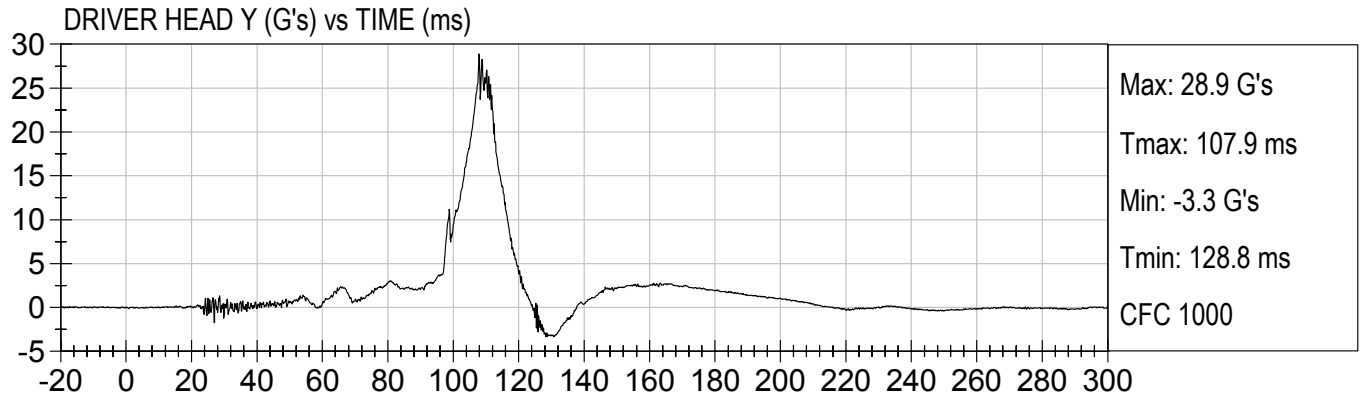
CRASH TEST DATA

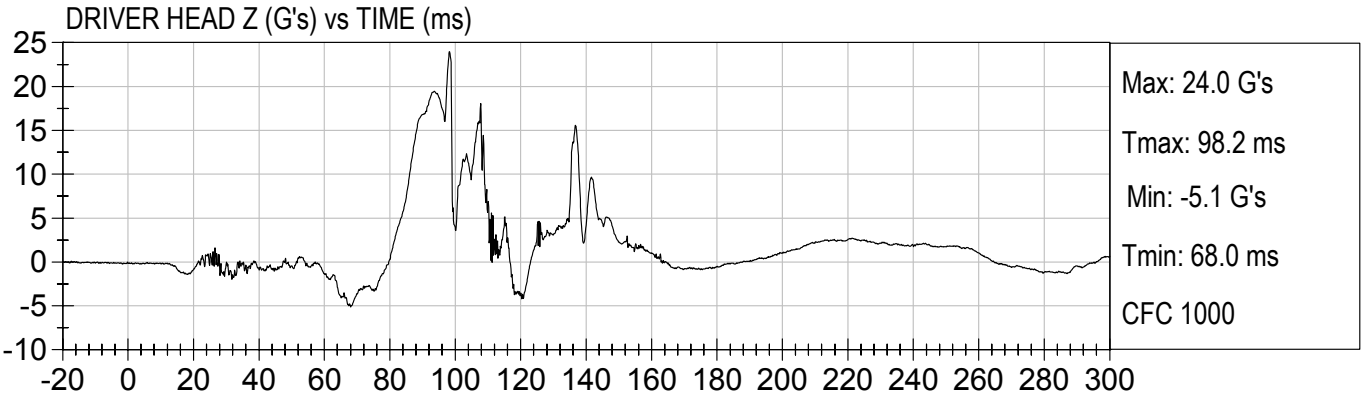
TABLE OF DATA PLOTS

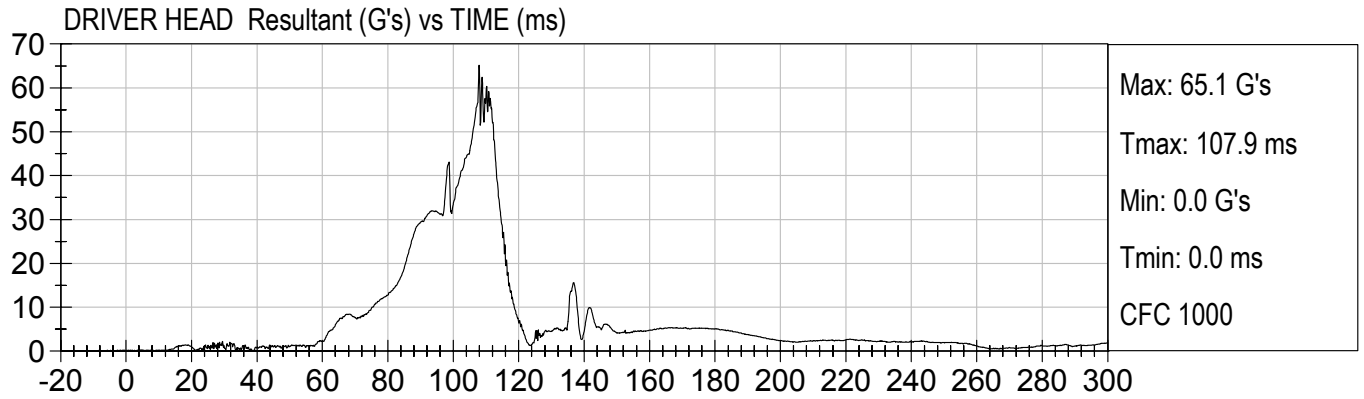
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

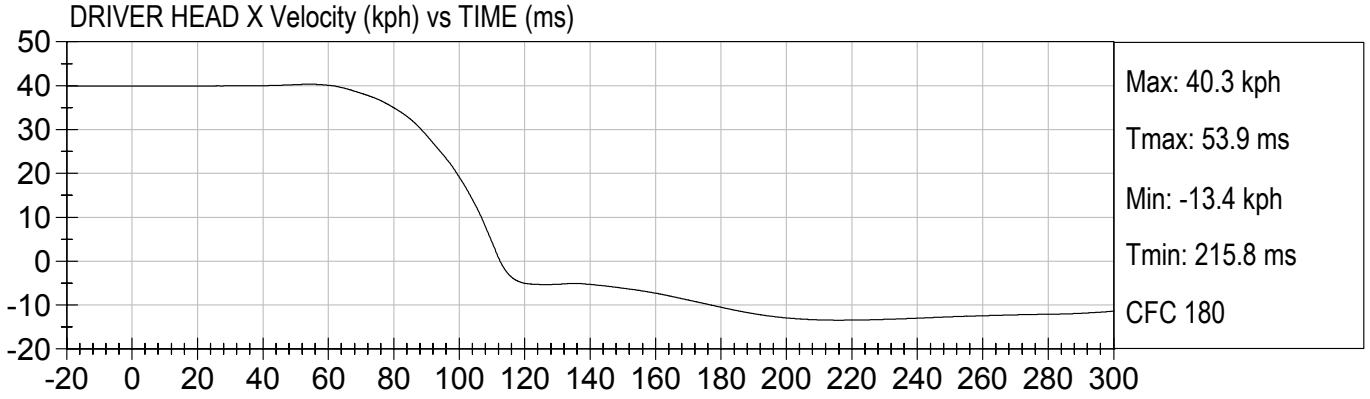
Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

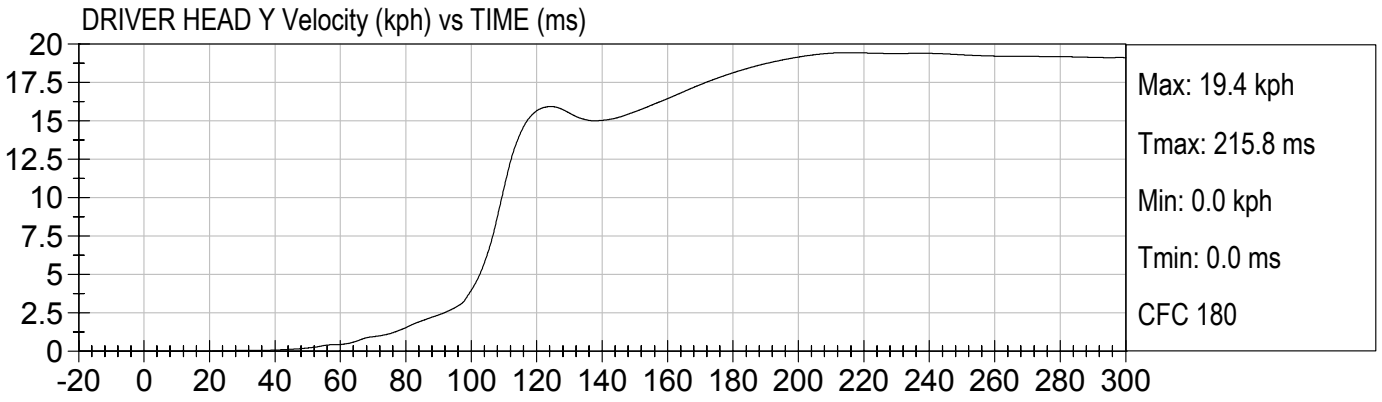


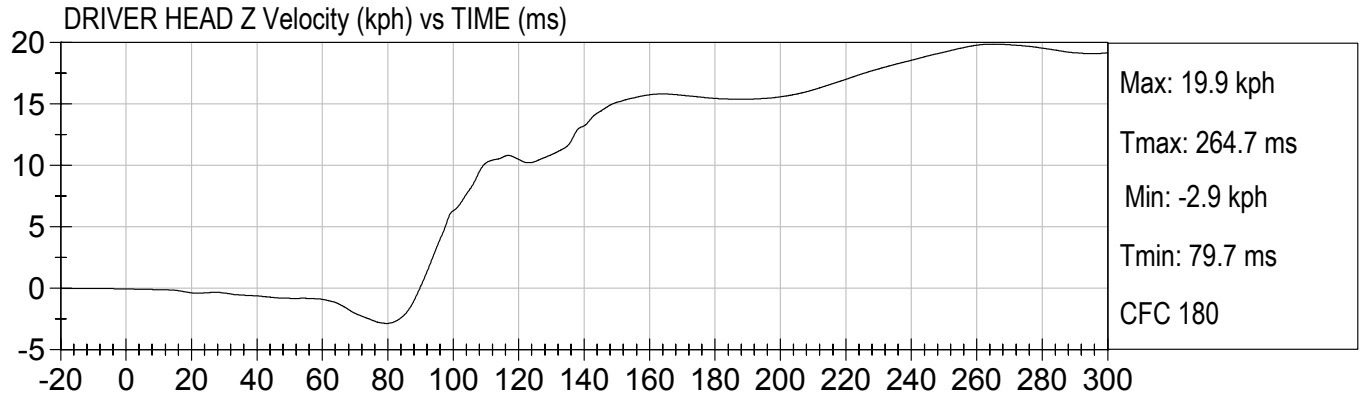







DRIVER HEAD X Velocity (kph) vs TIME (ms)
50
40
30
20
10
0
-10
-20
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 40.3 kph
Tmax: 53.9 ms
Min: -13.4 kph
Tmin: 215.8 ms
CFC 180

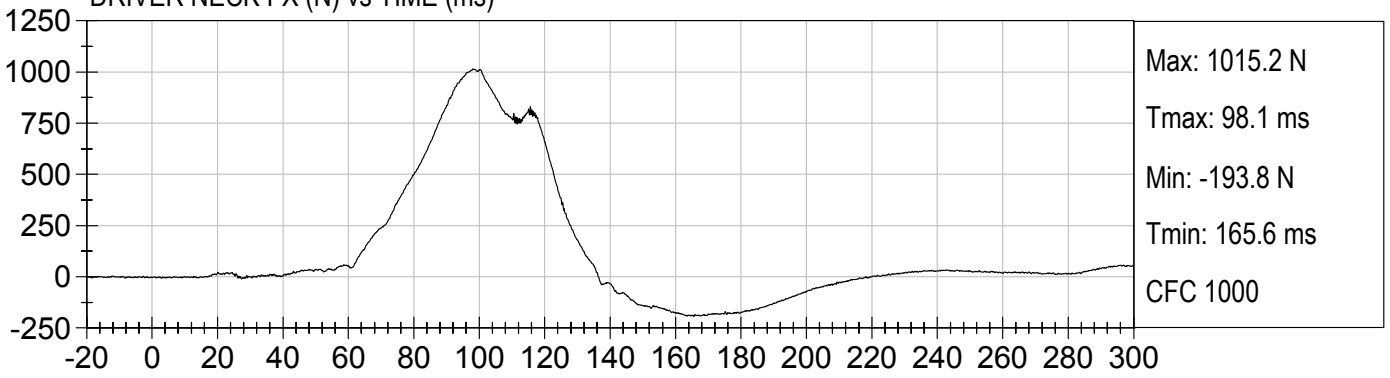

DRIVER HEAD Y Velocity (kph) vs TIME (ms)
20
17.5
15
12.5
10
7.5
5
2.5
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 19.4 kph
Tmax: 215.8 ms
Min: 0.0 kph
Tmin: 0.0 ms
CFC 180


DRIVER HEAD Z Velocity (kph) vs TIME (ms)
20
15
10
5
0
-5
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 19.9 kph
Tmax: 264.7 ms
Min: -2.9 kph
Tmin: 79.7 ms
CFC 180

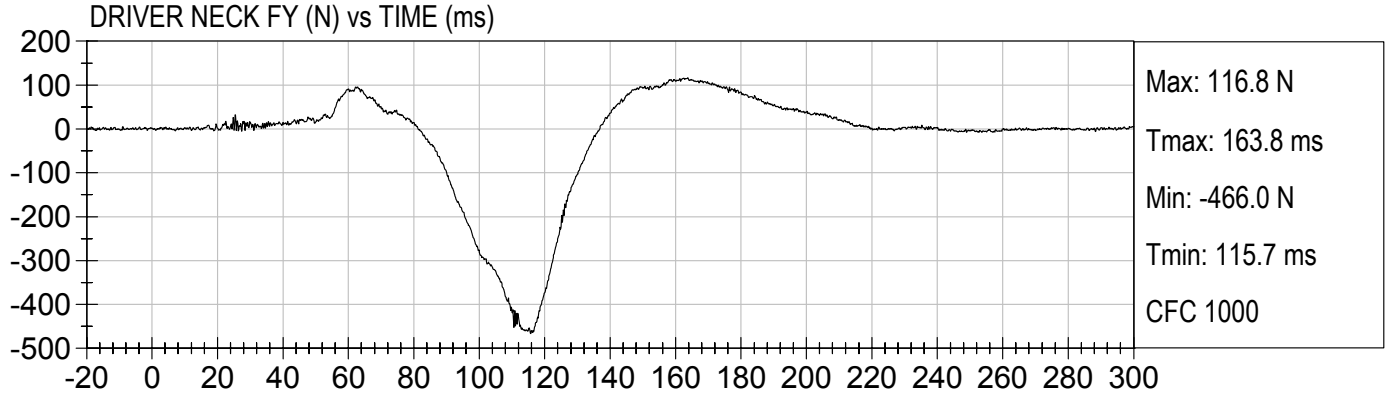
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

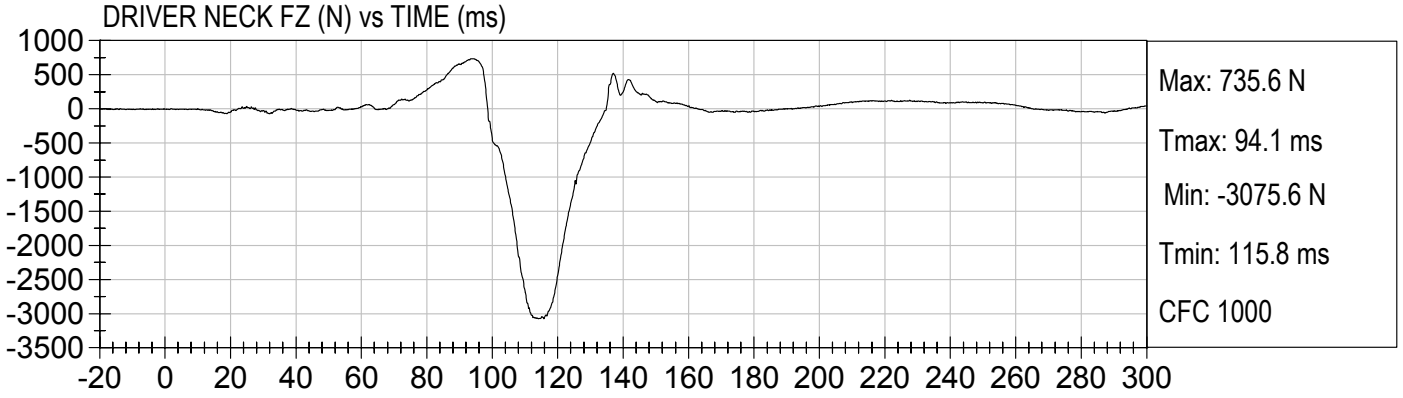
DRIVER NECK FX (N) vs TIME (ms)



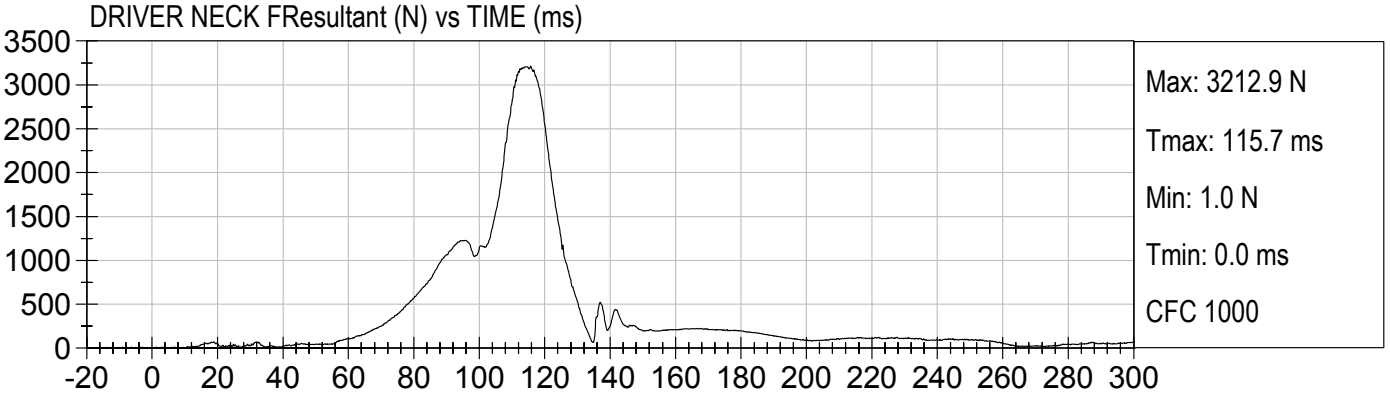
DRIVER NECK FY (N) vs TIME (ms)



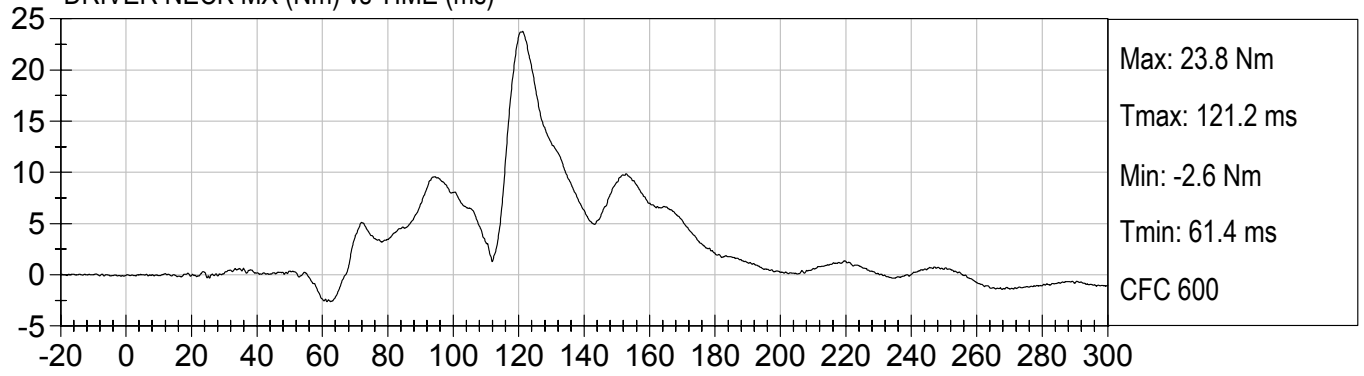
DRIVER NECK FZ (N) vs TIME (ms)



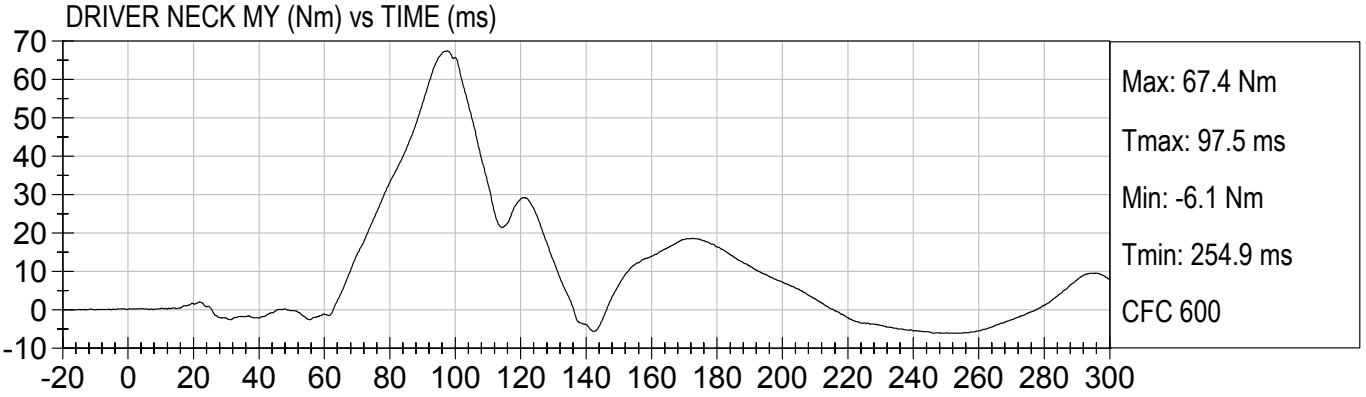
DRIVER NECK FResultant (N) vs TIME (ms)



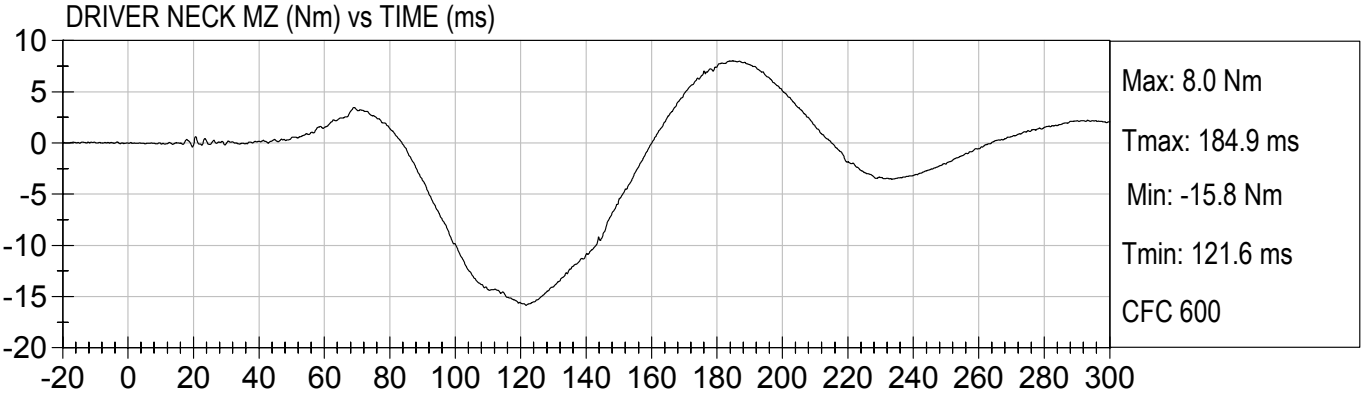
DRIVER NECK MX (Nm) vs TIME (ms)



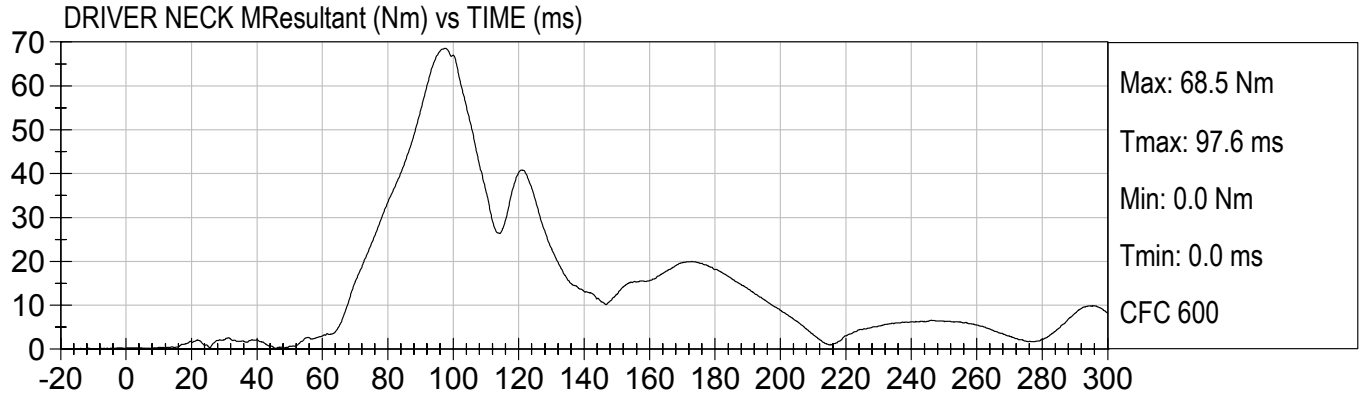
DRIVER NECK MY (Nm) vs TIME (ms)



DRIVER NECK MZ (Nm) vs TIME (ms)



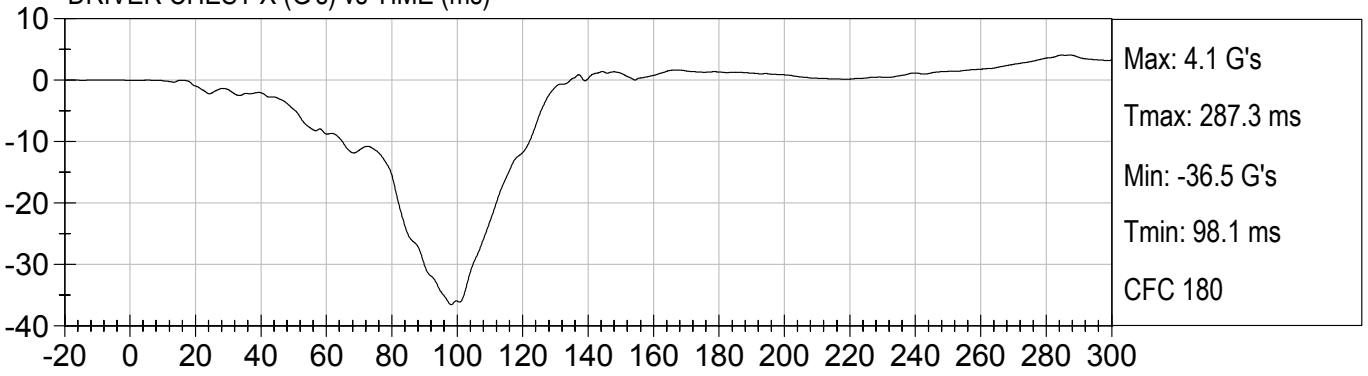
DRIVER NECK MResultant (Nm) vs TIME (ms)



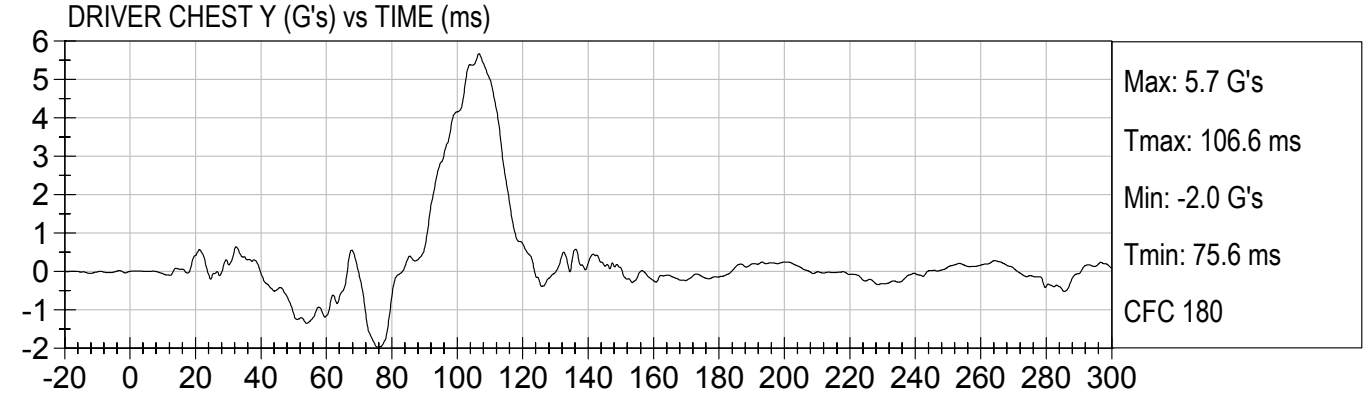
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

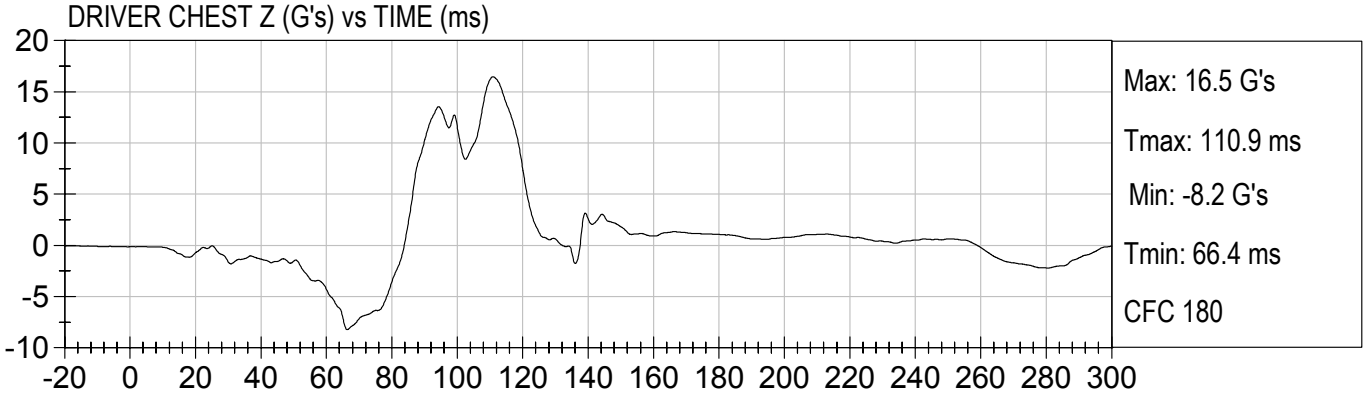
DRIVER CHEST X (G's) vs TIME (ms)



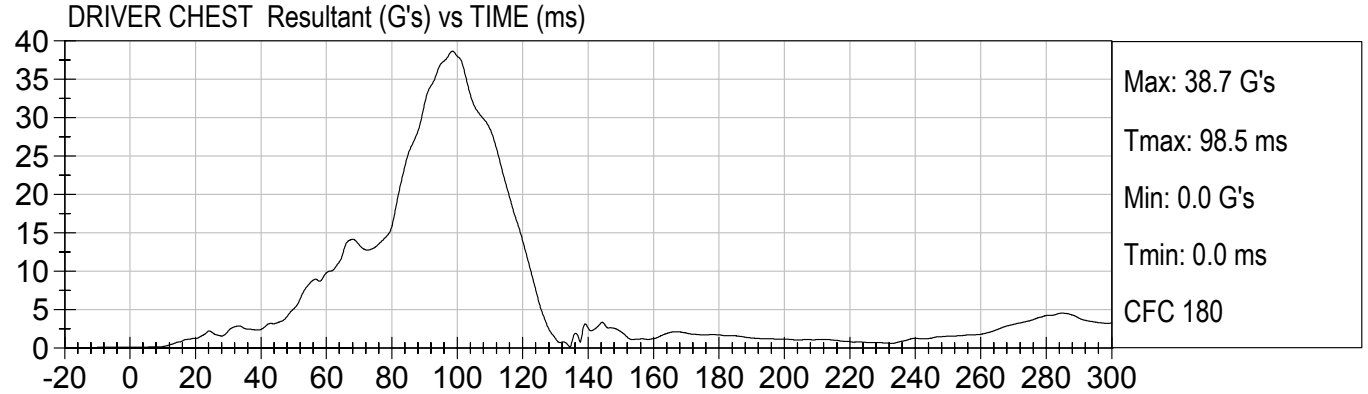
DRIVER CHEST Y (G's) vs TIME (ms)



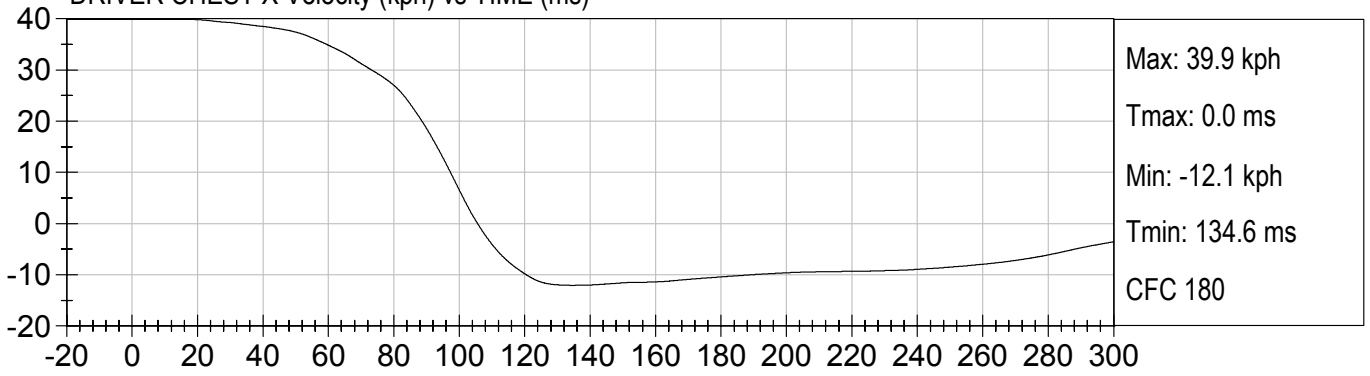
DRIVER CHEST Z (G's) vs TIME (ms)



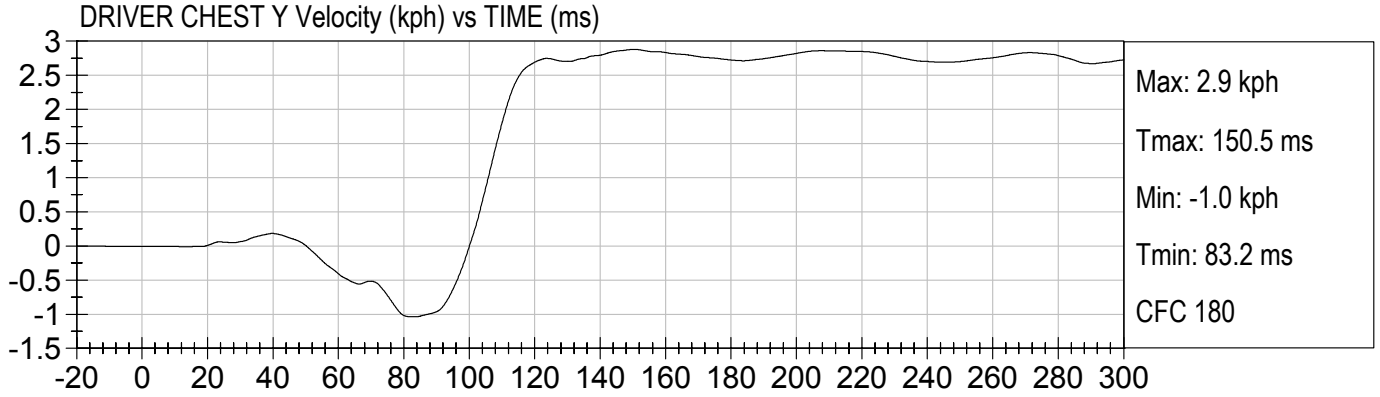
DRIVER CHEST Resultant (G's) vs TIME (ms)



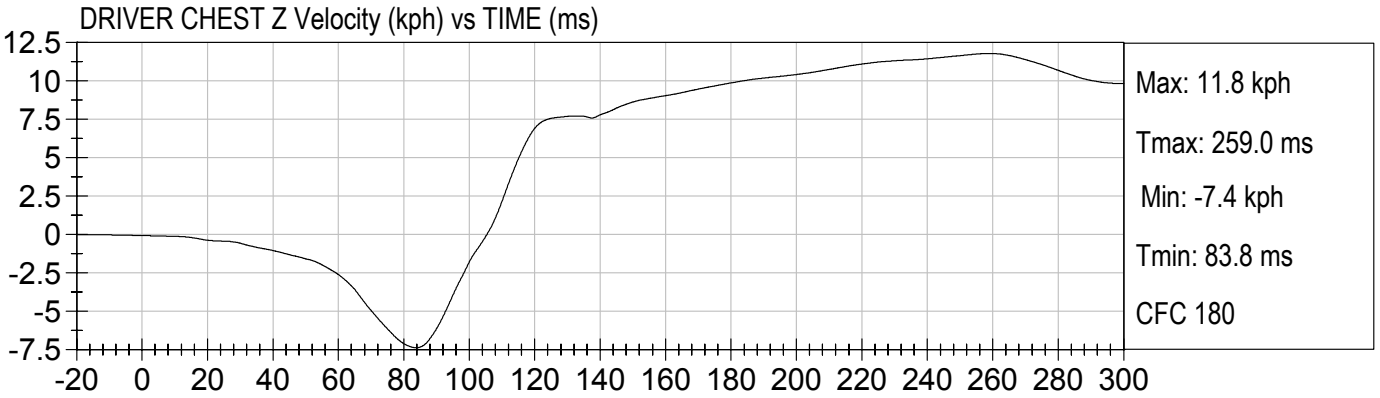
DRIVER CHEST X Velocity (kph) vs TIME (ms)



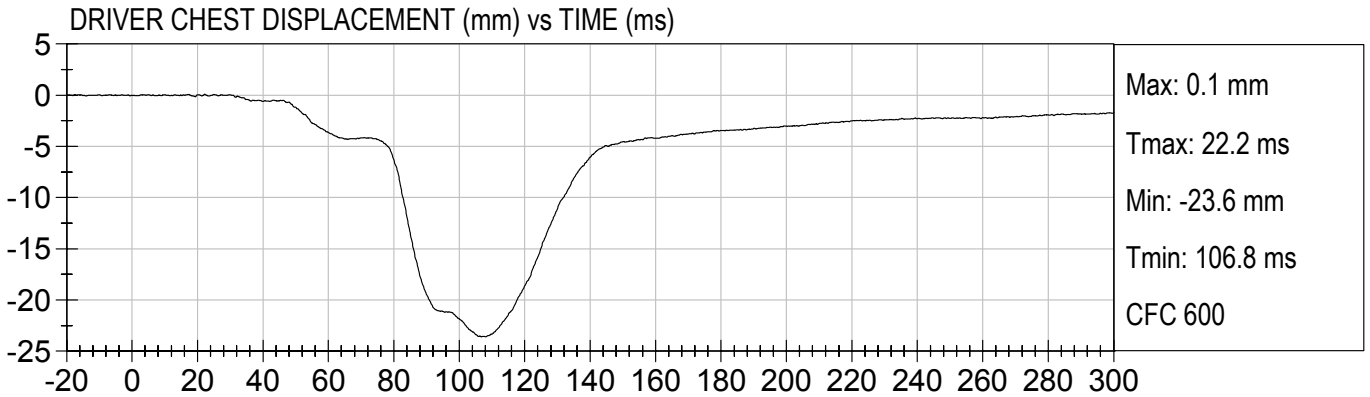
DRIVER CHEST Y Velocity (kph) vs TIME (ms)



DRIVER CHEST Z Velocity (kph) vs TIME (ms)

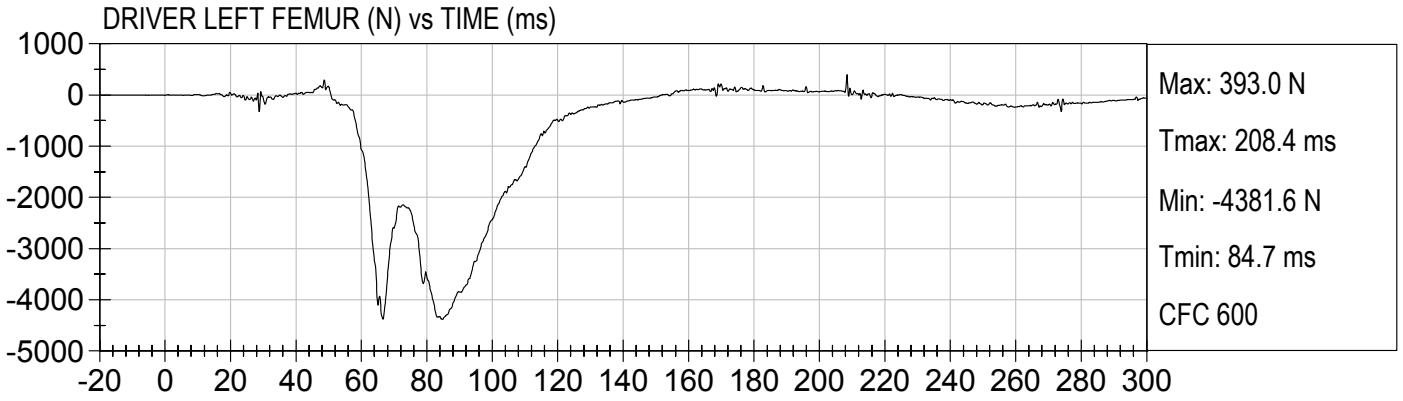


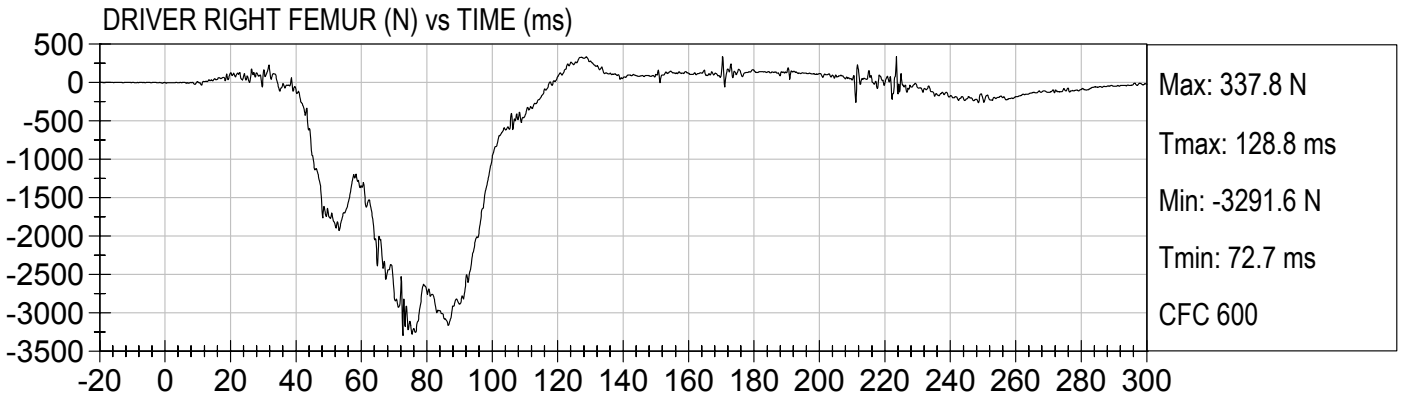
DRIVER CHEST DISPLACEMENT (mm) vs TIME (ms)



25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

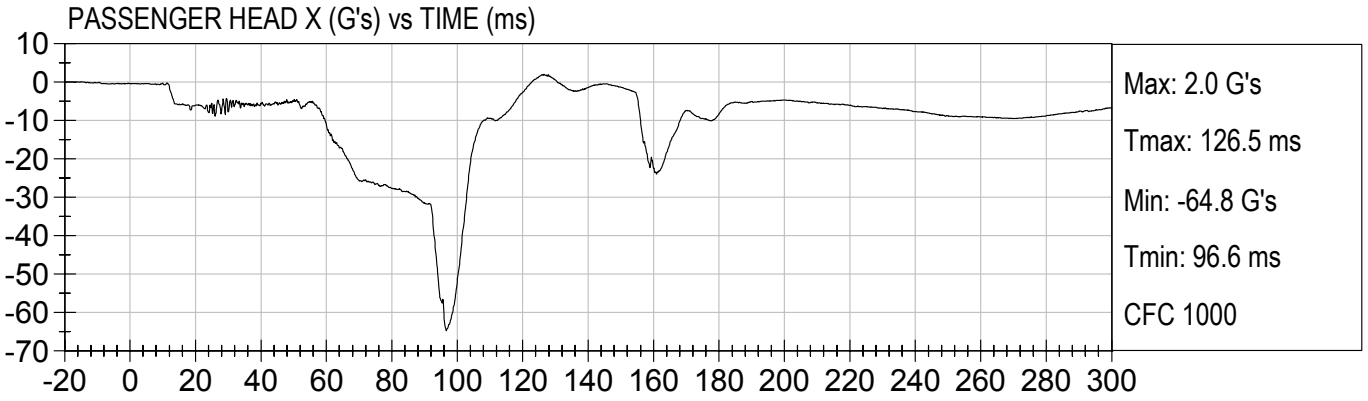
Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

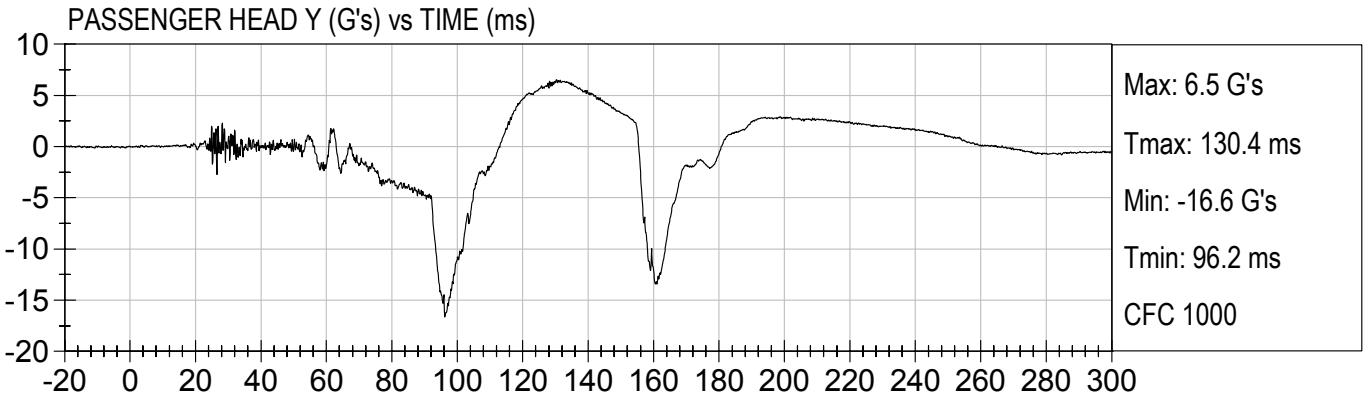


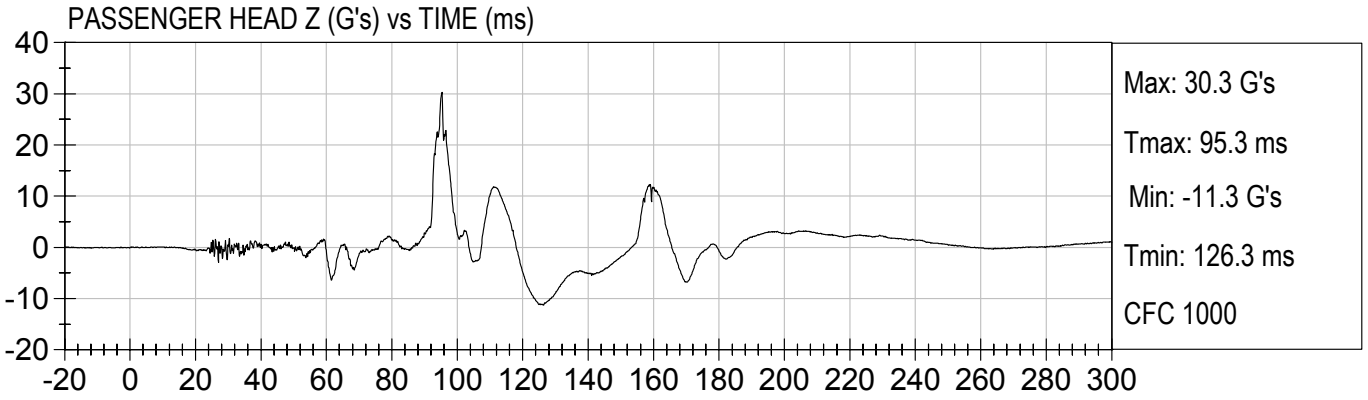


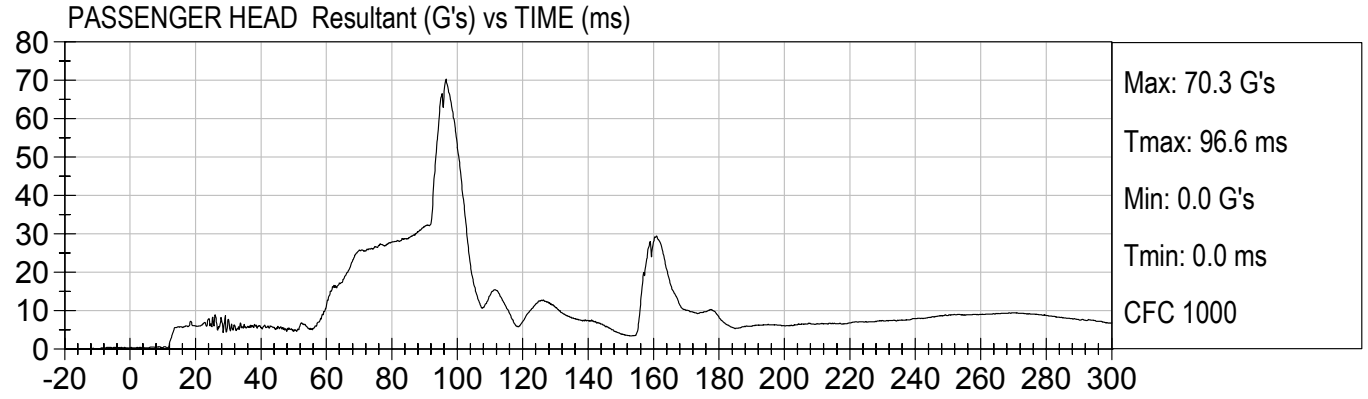
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

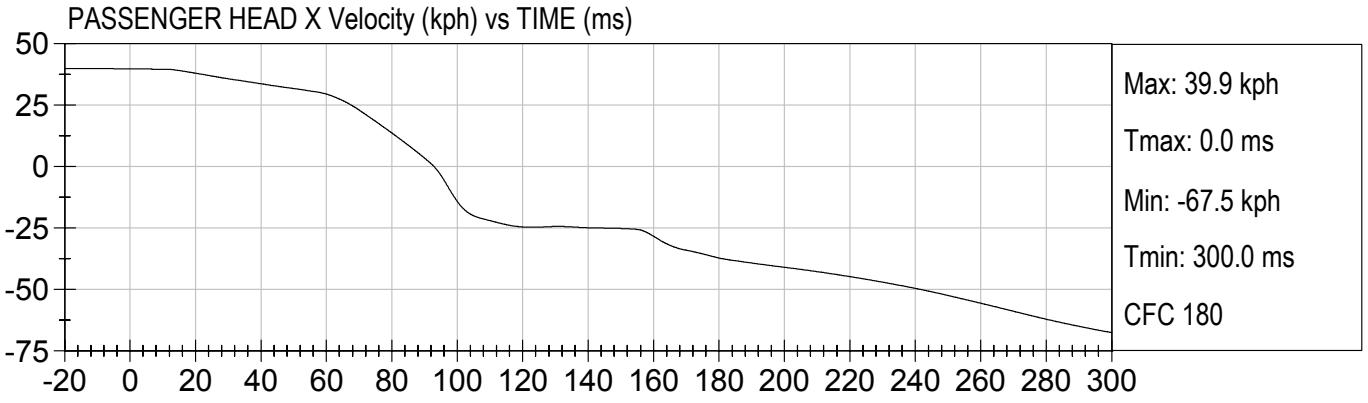
Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

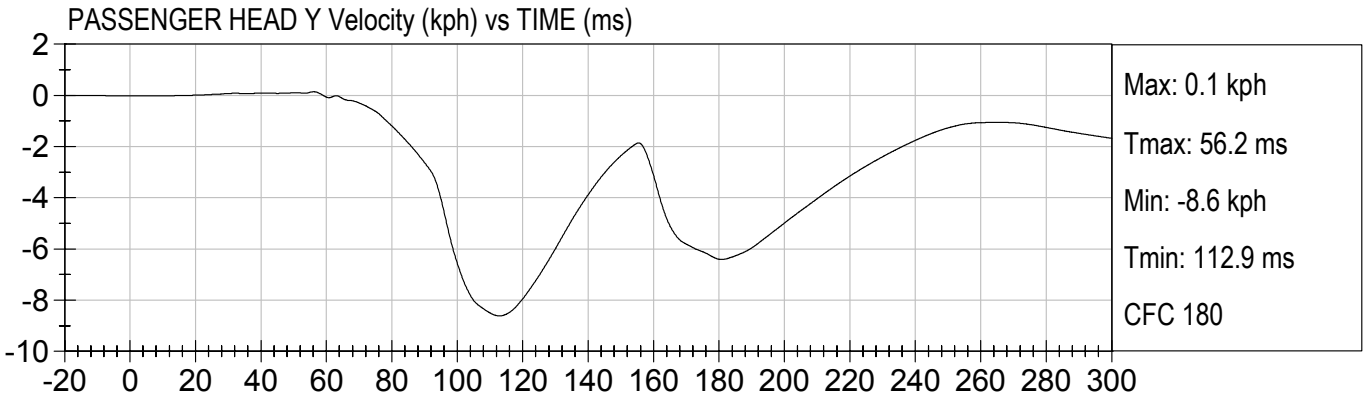


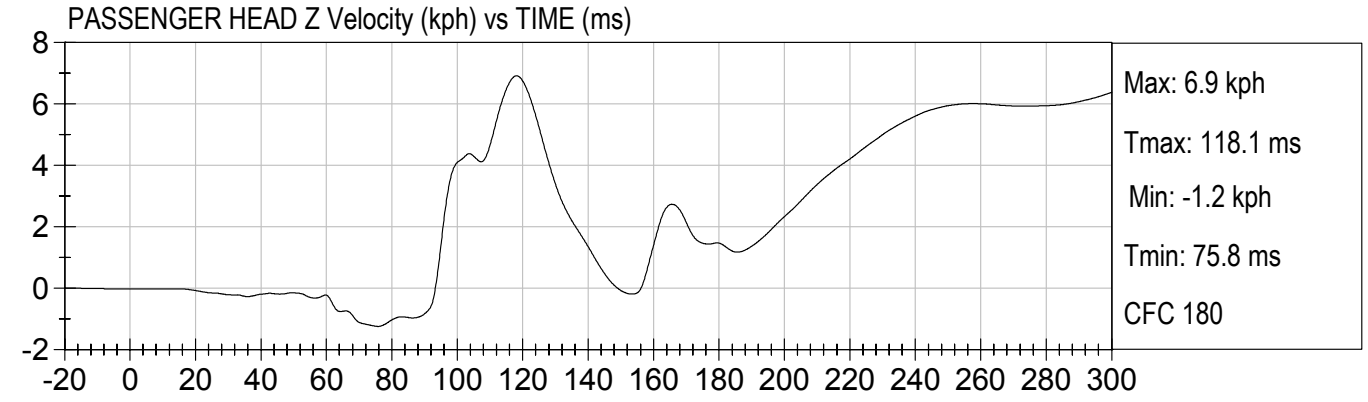







PASSENGER HEAD X Velocity (kph) vs TIME (ms)
50
25
0
-25
-50
-75
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 39.9 kph
Tmax: 0.0 ms
Min: -67.5 kph
Tmin: 300.0 ms
CFC 180

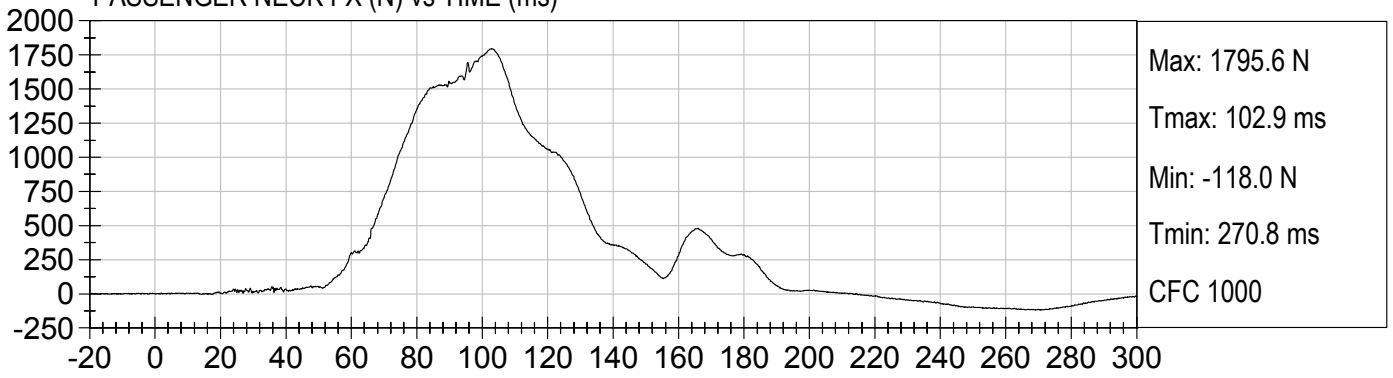

PASSENGER HEAD Y Velocity (kph) vs TIME (ms)
2
0
-2
-4
-6
-8
-10
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.1 kph
Tmax: 56.2 ms
Min: -8.6 kph
Tmin: 112.9 ms
CFC 180


PASSENGER HEAD Z Velocity (kph) vs TIME (ms)
8
6
4
2
0
-2
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 6.9 kph
Tmax: 118.1 ms
Min: -1.2 kph
Tmin: 75.8 ms
CFC 180

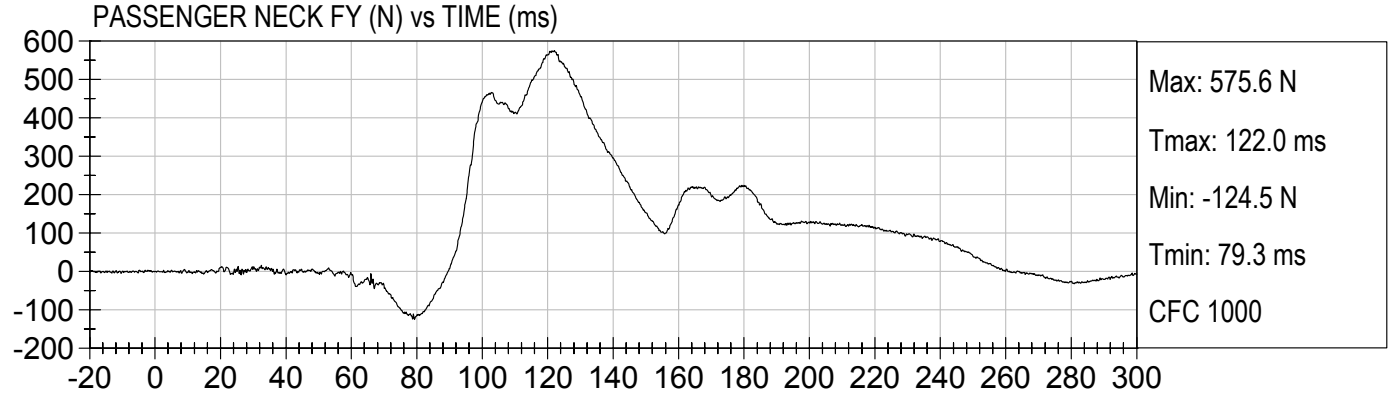
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

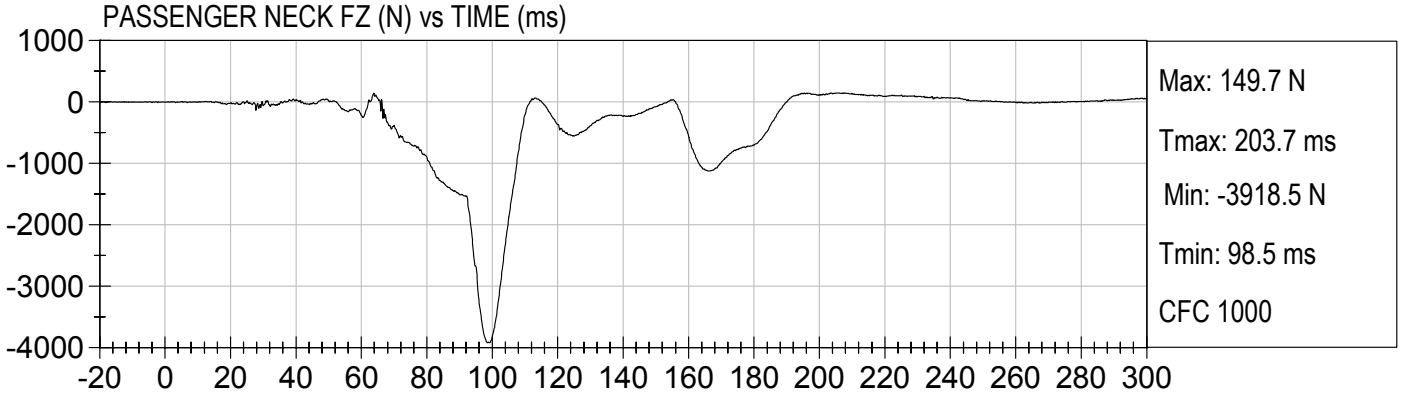
PASSENGER NECK FX (N) vs TIME (ms)



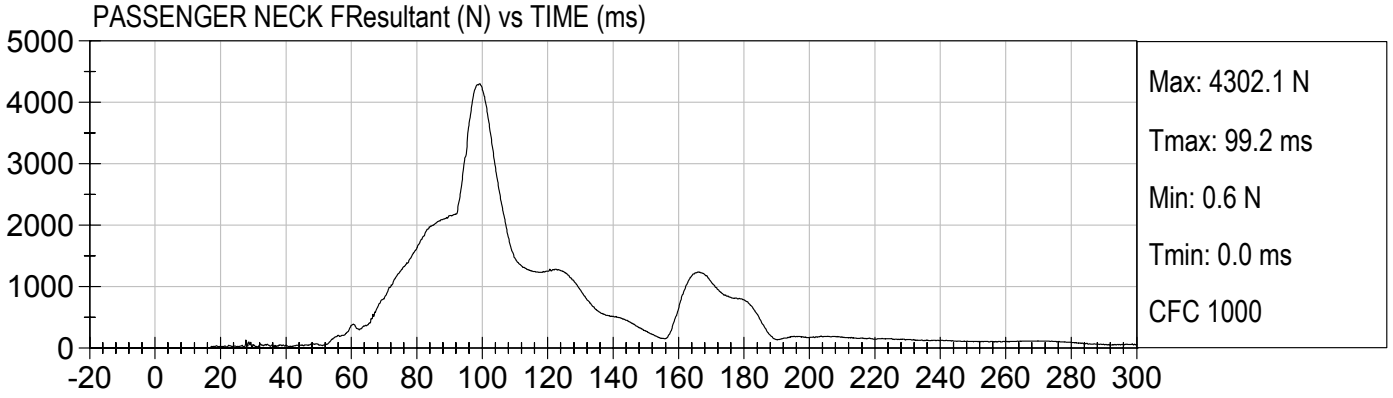
PASSENGER NECK FY (N) vs TIME (ms)



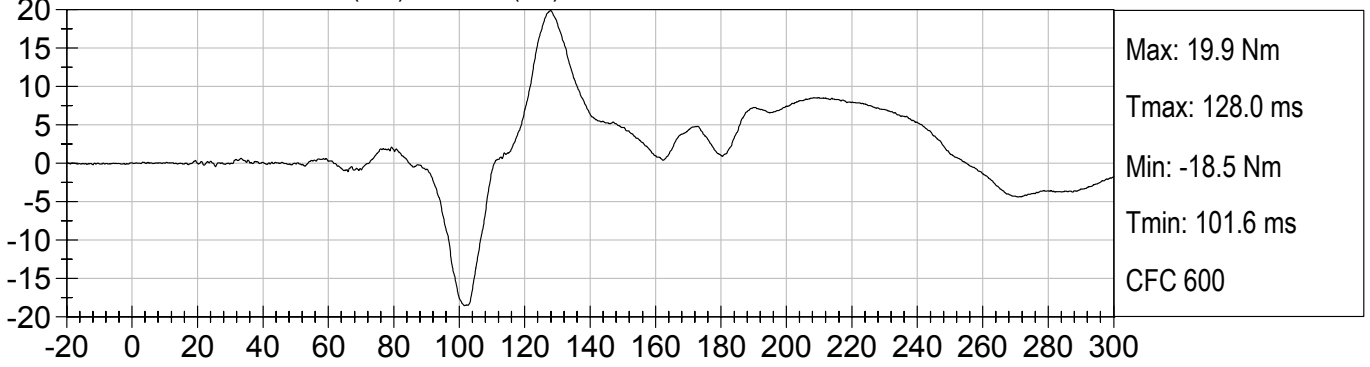
PASSENGER NECK FZ (N) vs TIME (ms)



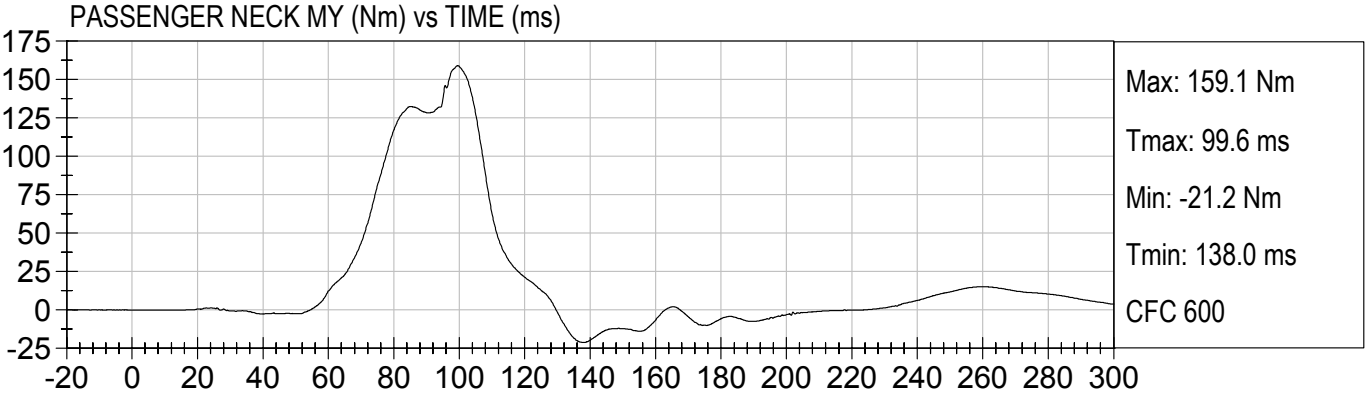
PASSENGER NECK FResultant (N) vs TIME (ms)



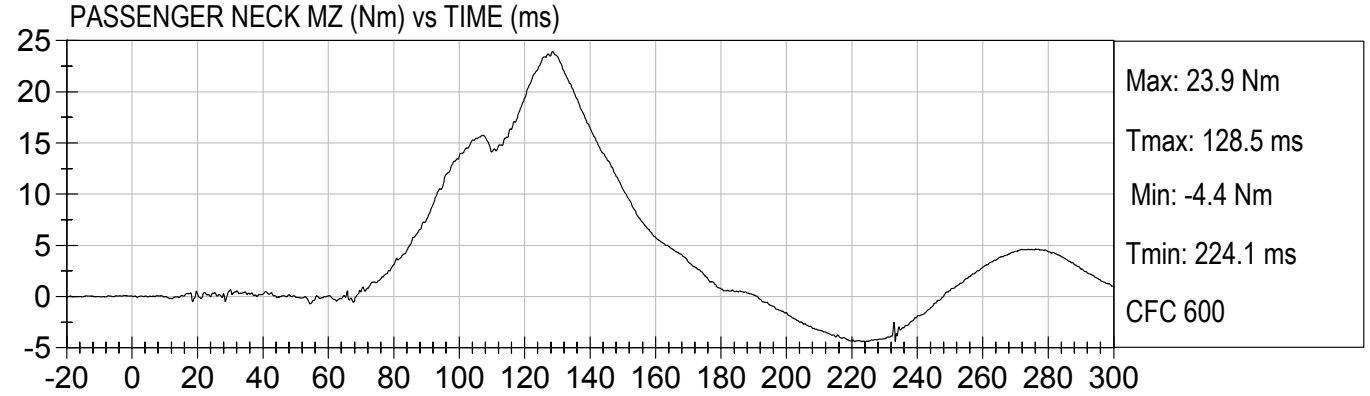
PASSENGER NECK MX (Nm) vs TIME (ms)



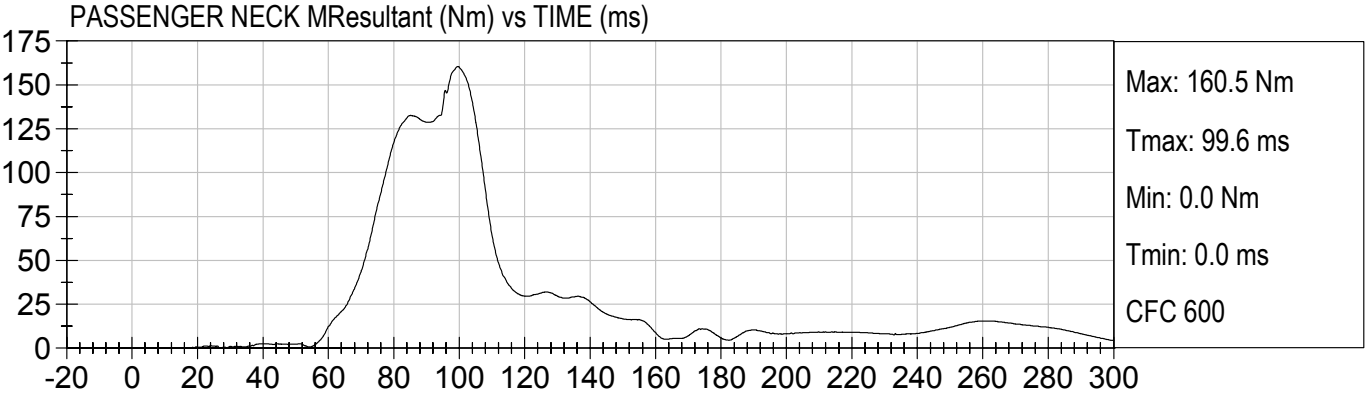
PASSENGER NECK MY (Nm) vs TIME (ms)



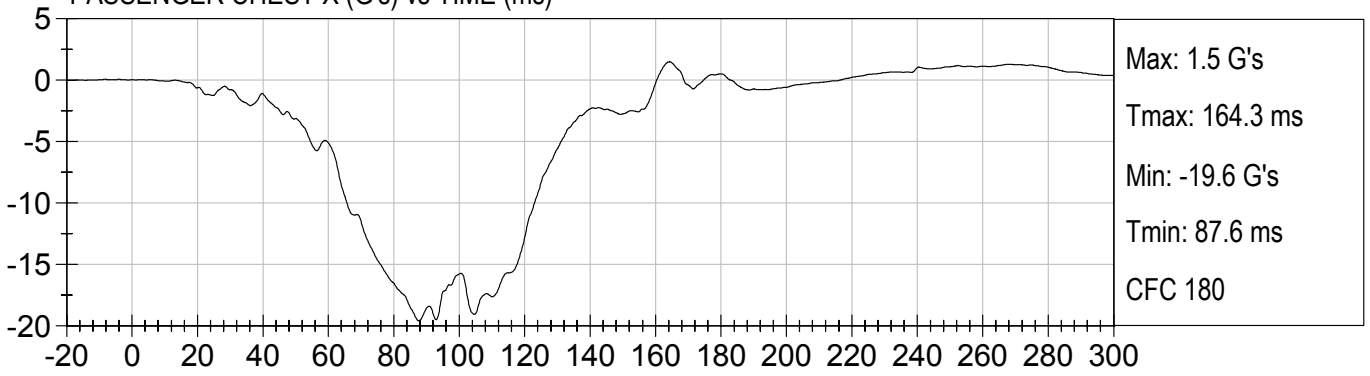
PASSENGER NECK MZ (Nm) vs TIME (ms)



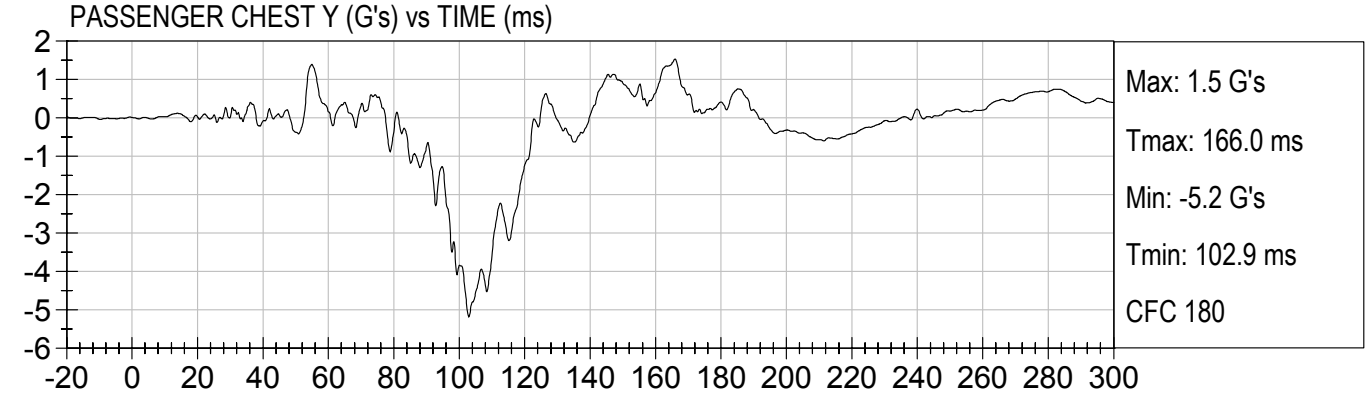
PASSENGER NECK MResultant (Nm) vs TIME (ms)



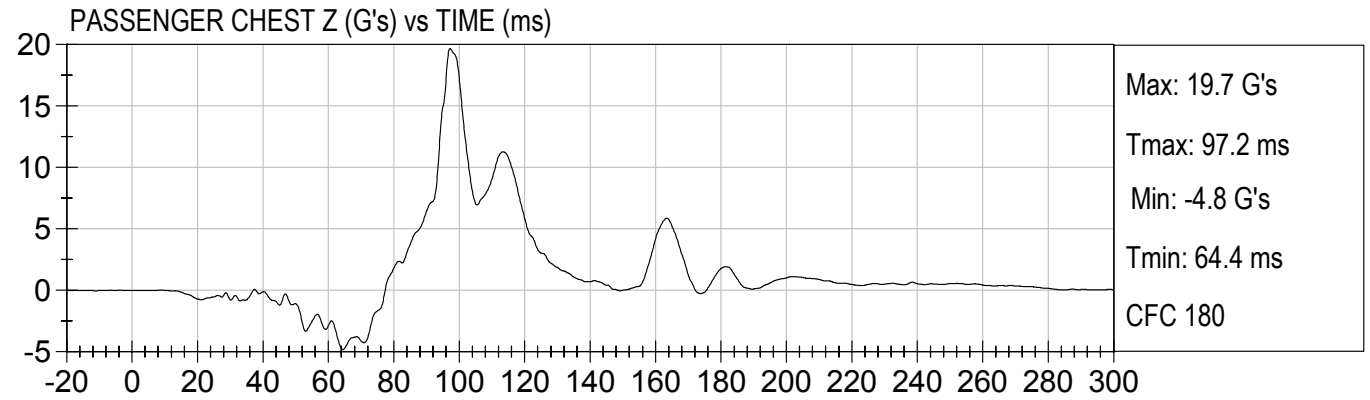
PASSENGER CHEST X (G's) vs TIME (ms)



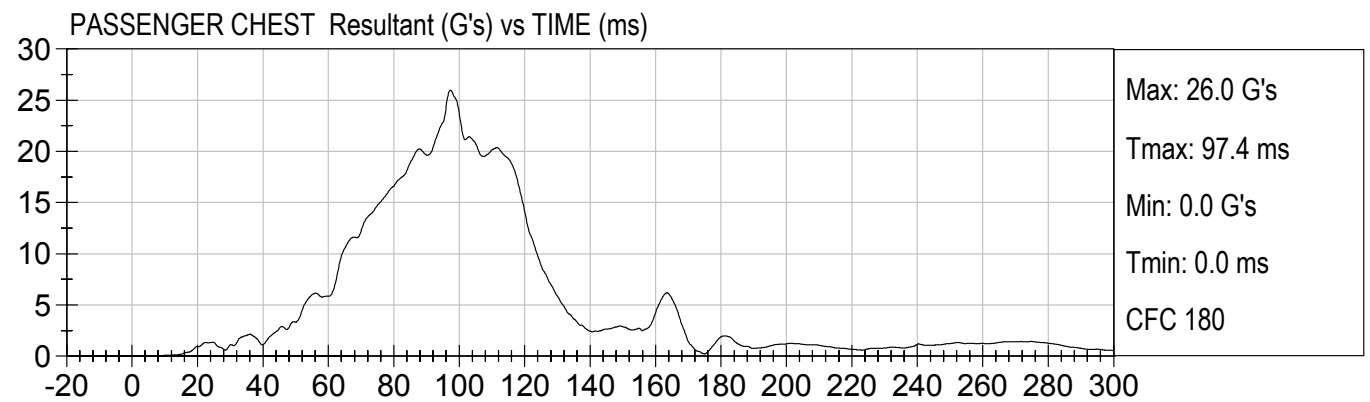
PASSENGER CHEST Y (G's) vs TIME (ms)



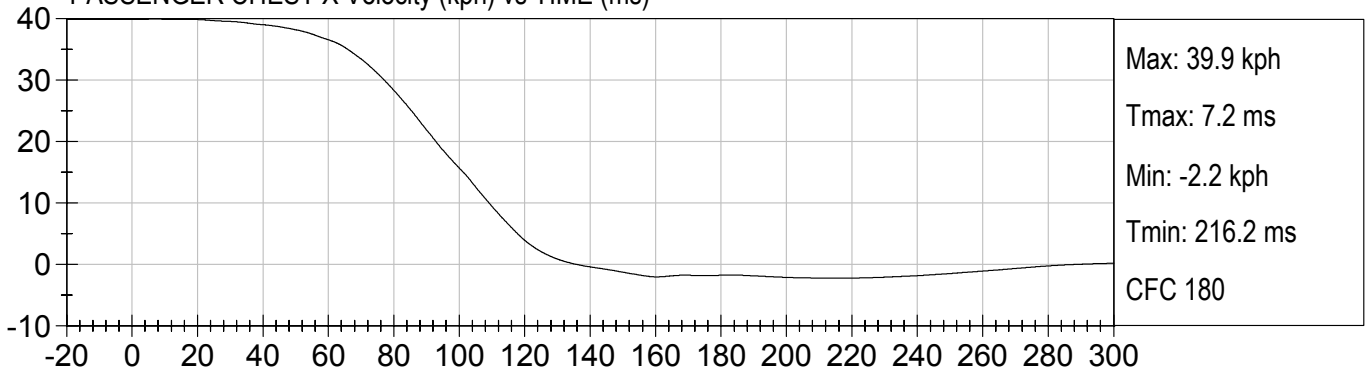
PASSENGER CHEST Z (G's) vs TIME (ms)



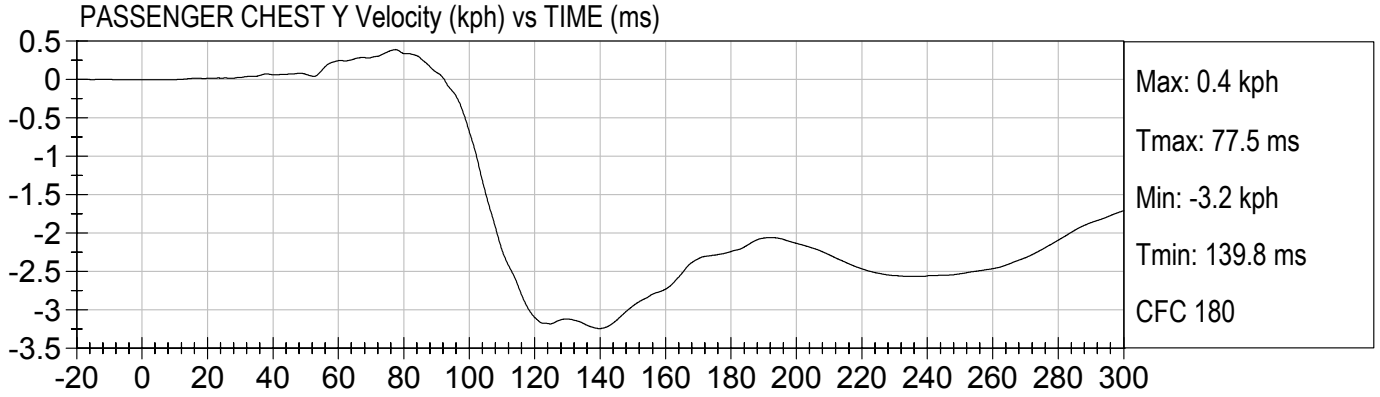
PASSENGER CHEST Resultant (G's) vs TIME (ms)



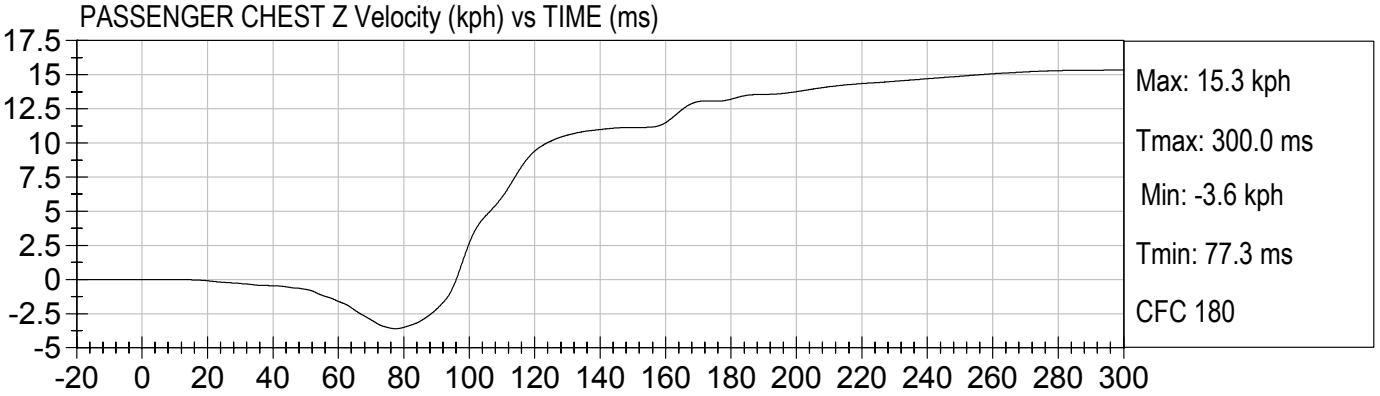
PASSENGER CHEST X Velocity (kph) vs TIME (ms)



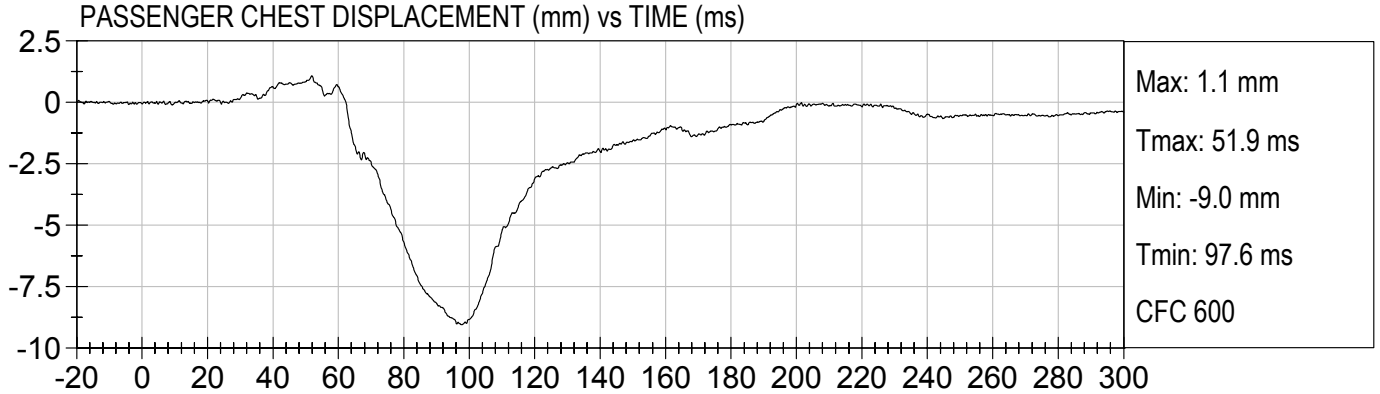
PASSENGER CHEST Y Velocity (kph) vs TIME (ms)



PASSENGER CHEST Z Velocity (kph) vs TIME (ms)

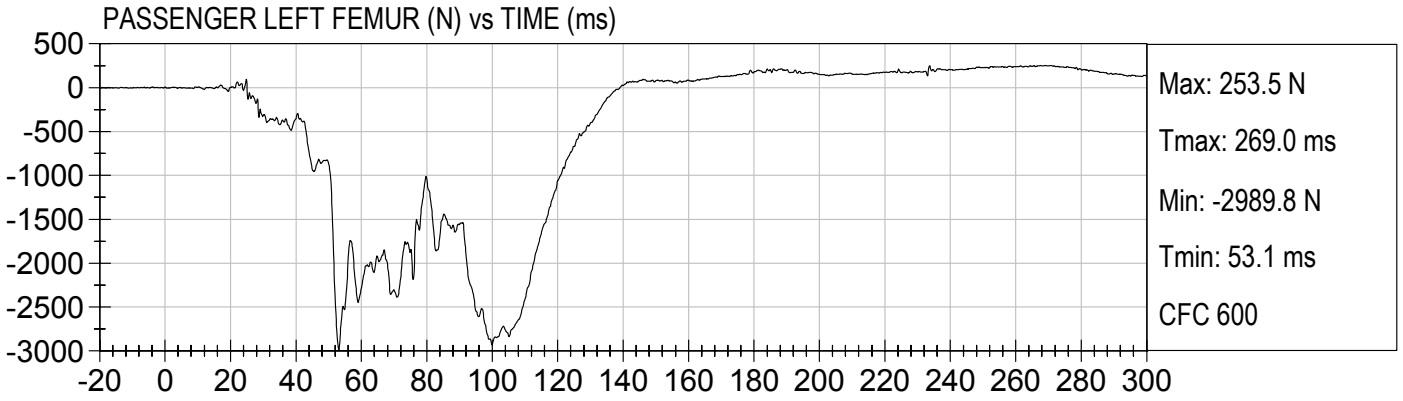


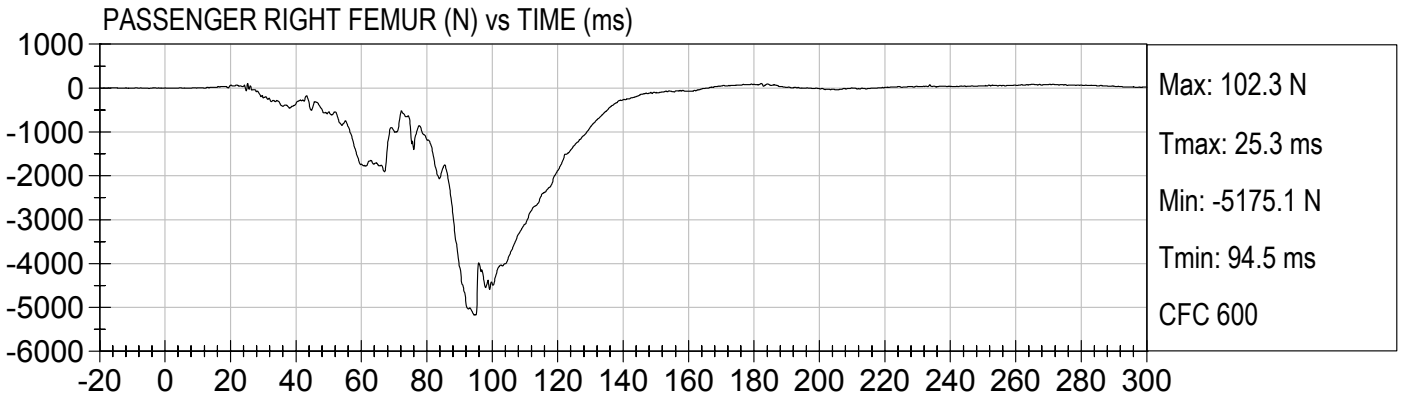
PASSENGER CHEST DISPLACEMENT (mm) vs TIME (ms)

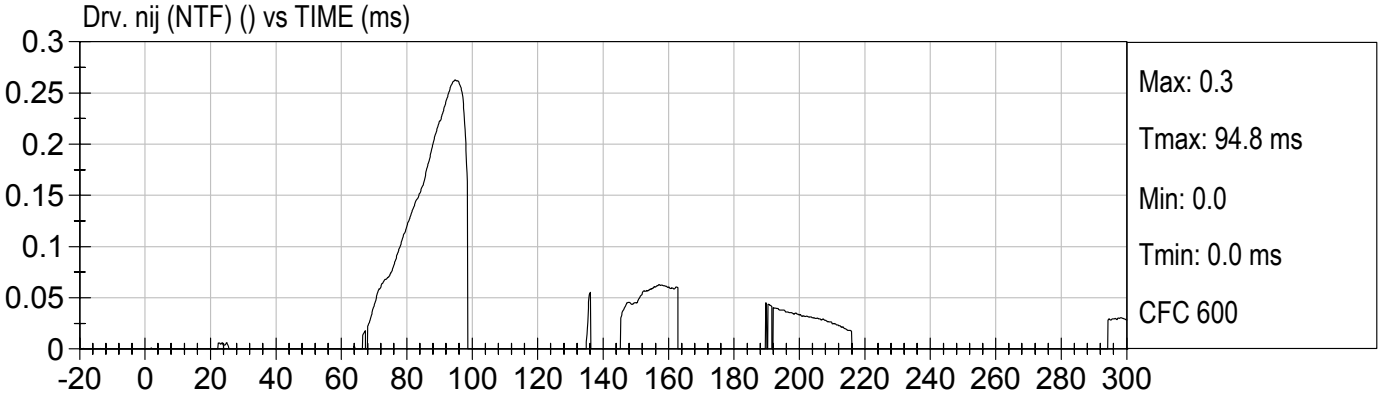


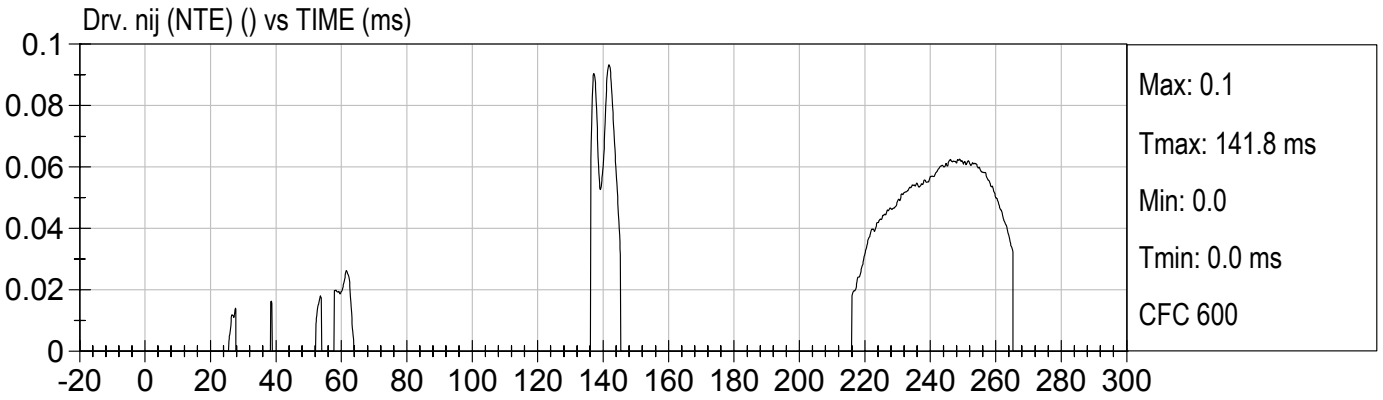
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

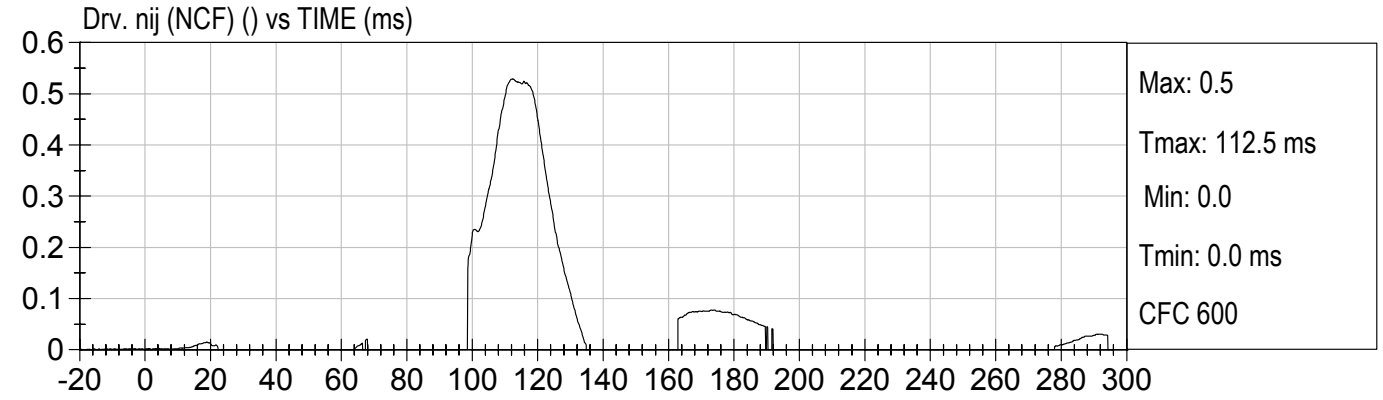
Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)

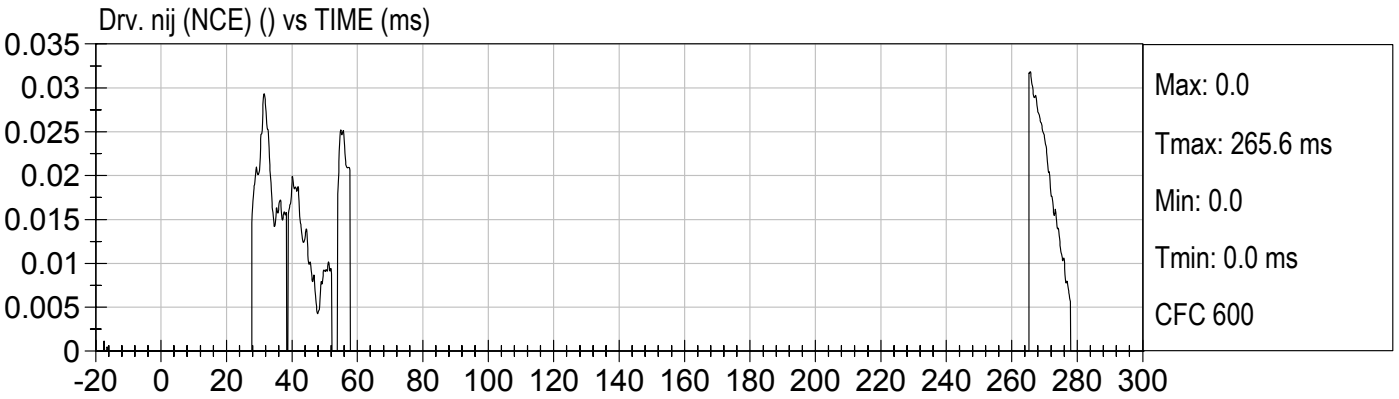


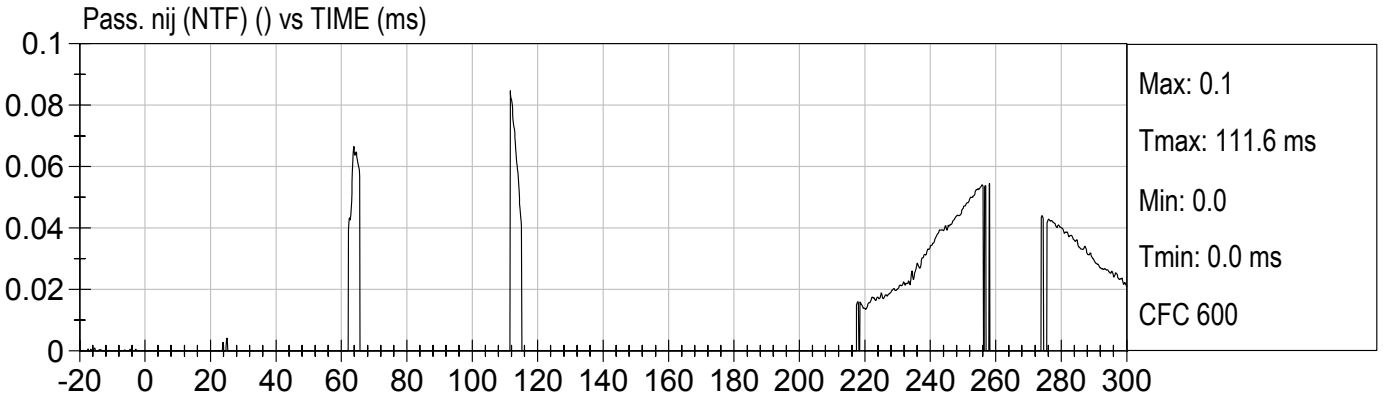


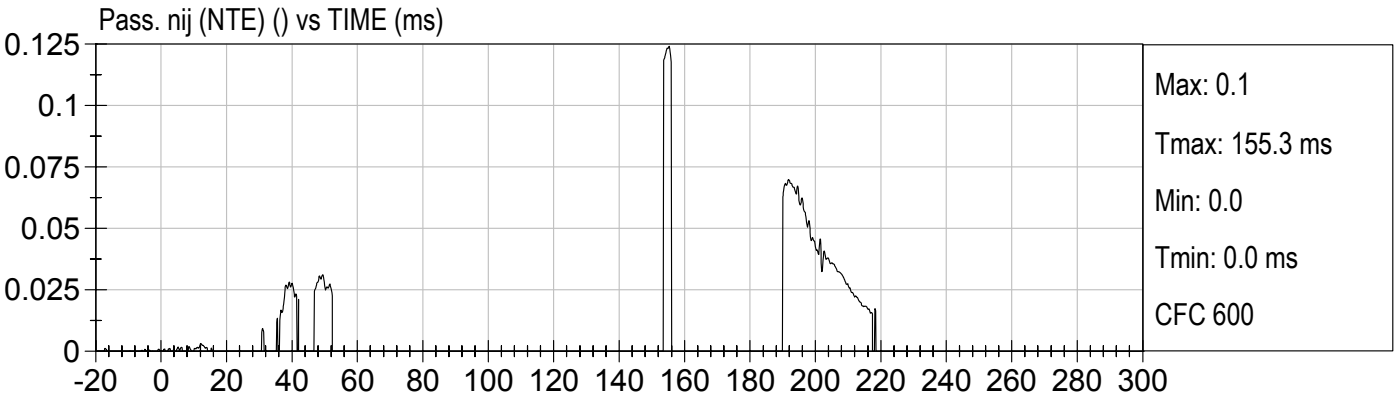

Drv. nij (NTF) () vs TIME (ms)
0.3
0.25
0.2
0.15
0.1
0.05
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.3
Tmax: 94.8 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600

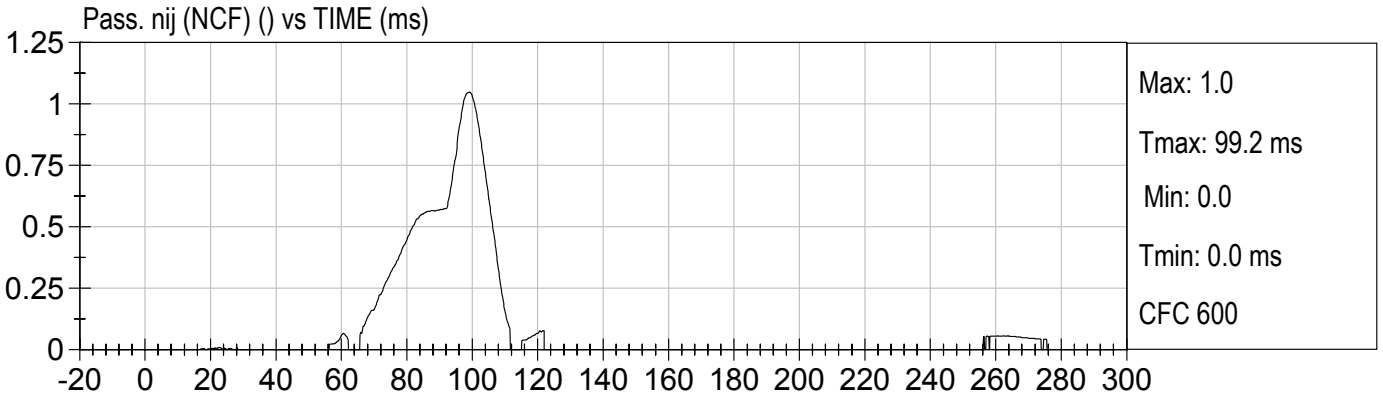

Drv. nij (NTE) () vs TIME (ms)
0.1
0.08
0.06
0.04
0.02
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.1
Tmax: 141.8 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600

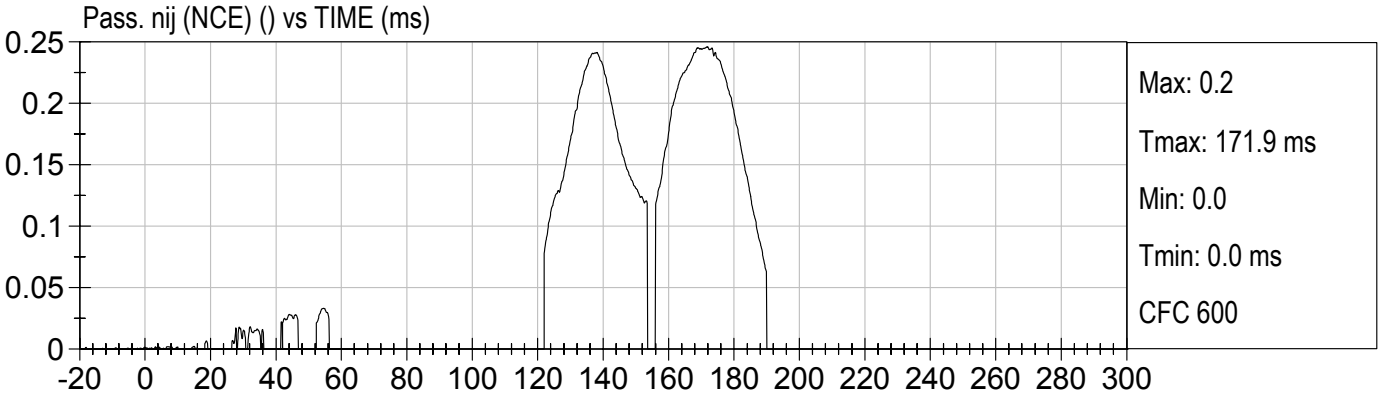

Drv. nij (NCF) () vs TIME (ms)
0.6
0.5
0.4
0.3
0.2
0.1
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.5
Tmax: 112.5 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600

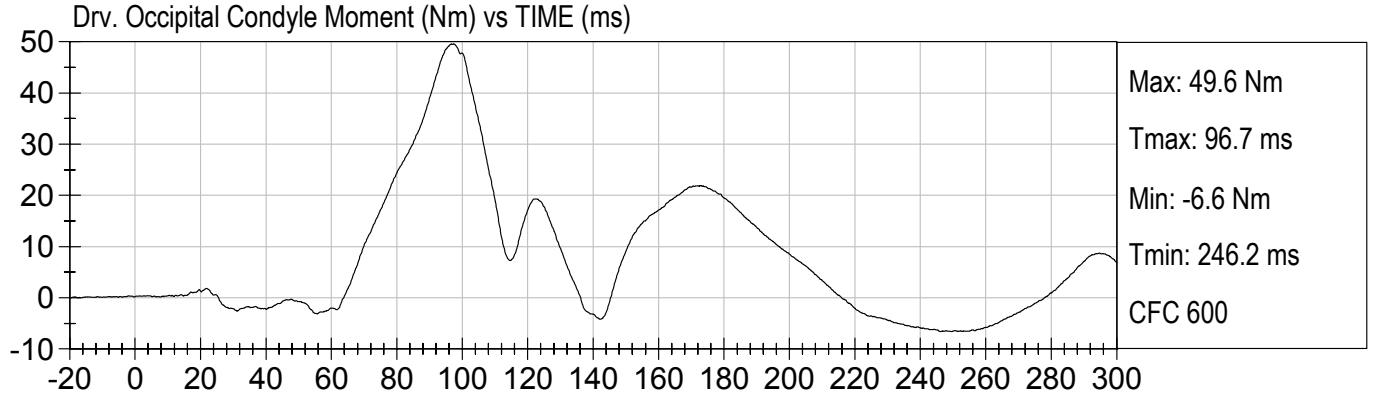

Drv. nij (NCE) () vs TIME (ms)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.0
Tmax: 265.6 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600

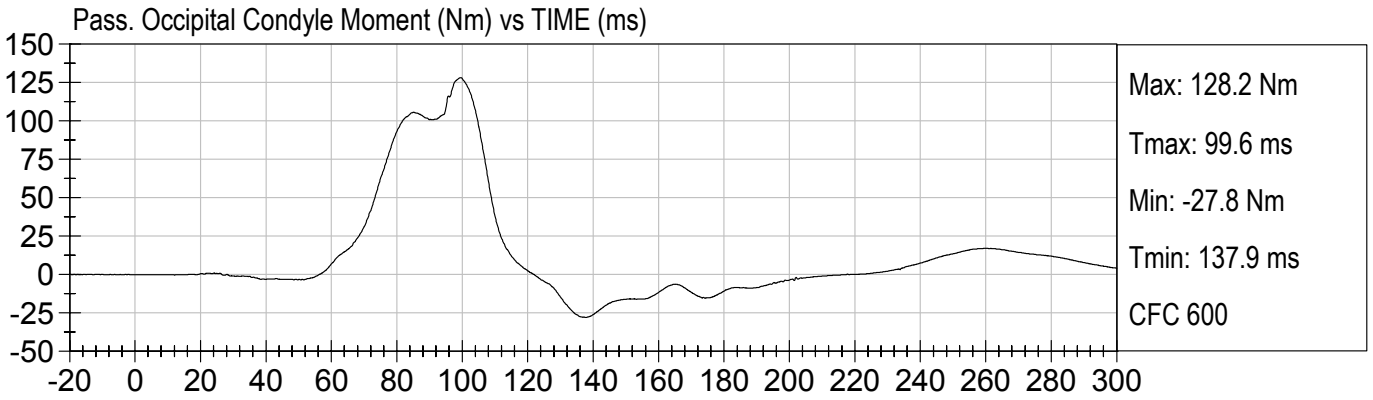

Pass. nij (NTF) () vs TIME (ms)
0.1
0.08
0.06
0.04
0.02
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.1
Tmax: 111.6 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600


Pass. nij (NTE) () vs TIME (ms)
0.125
0.1
0.075
0.05
0.025
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.1
Tmax: 155.3 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600

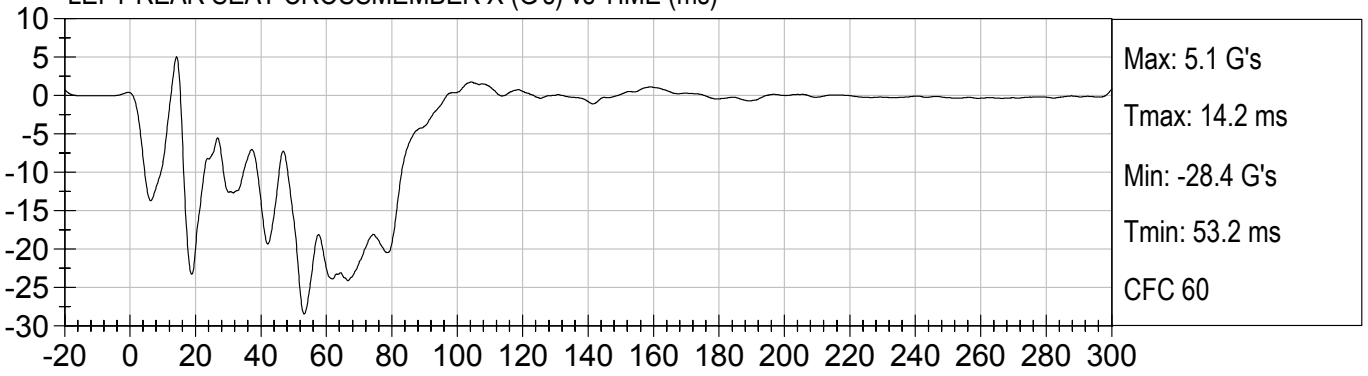

Pass. nij (NCF) () vs TIME (ms)
1.25
1
0.75
0.5
0.25
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 1.0
Tmax: 99.2 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600


Pass. nij (NCE) () vs TIME (ms)
0.25
0.2
0.15
0.1
0.05
0
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 0.2
Tmax: 171.9 ms
Min: 0.0
Tmin: 0.0 ms
CFC 600

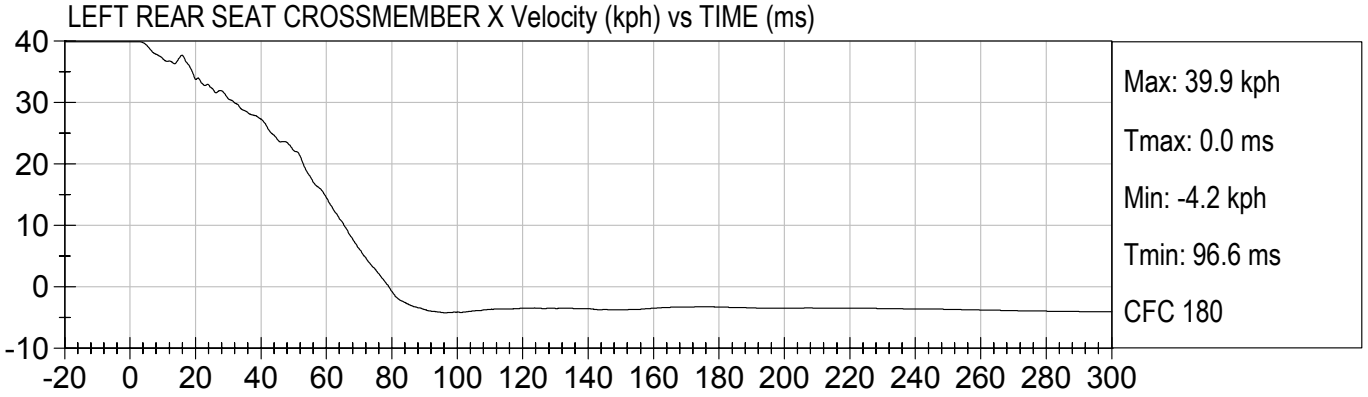

Drv. Occipital Condyle Moment (Nm) vs TIME (ms)
50
40
30
20
10
0
-10
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 49.6 Nm
Tmax: 96.7 ms
Min: -6.6 Nm
Tmin: 246.2 ms
CFC 600


Pass. Occipital Condyle Moment (Nm) vs TIME (ms)
150
125
100
75
50
25
0
-25
-50
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
Max: 128.2 Nm
Tmax: 99.6 ms
Min: -27.8 Nm
Tmin: 137.9 ms
CFC 600

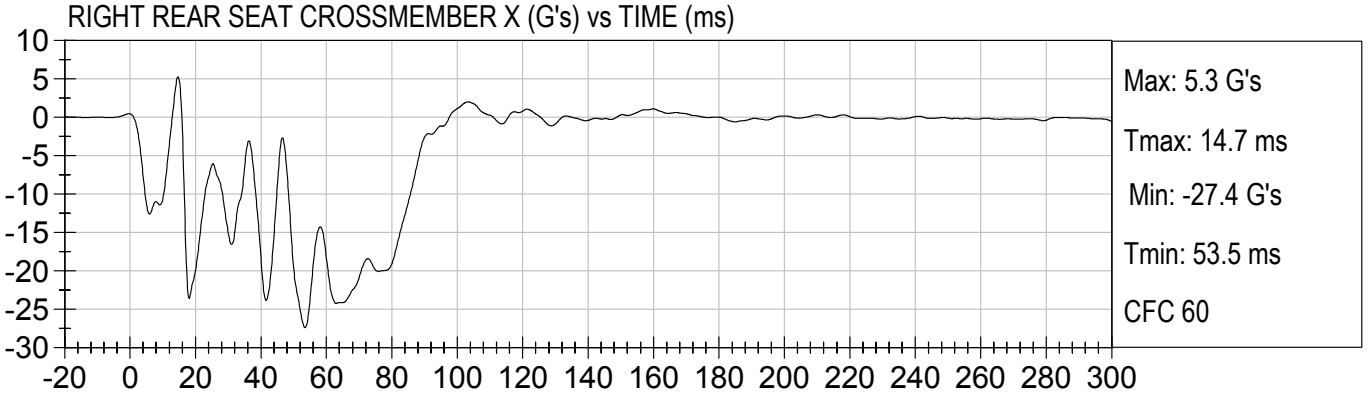
LEFT REAR SEAT CROSSMEMBER X (G's) vs TIME (ms)



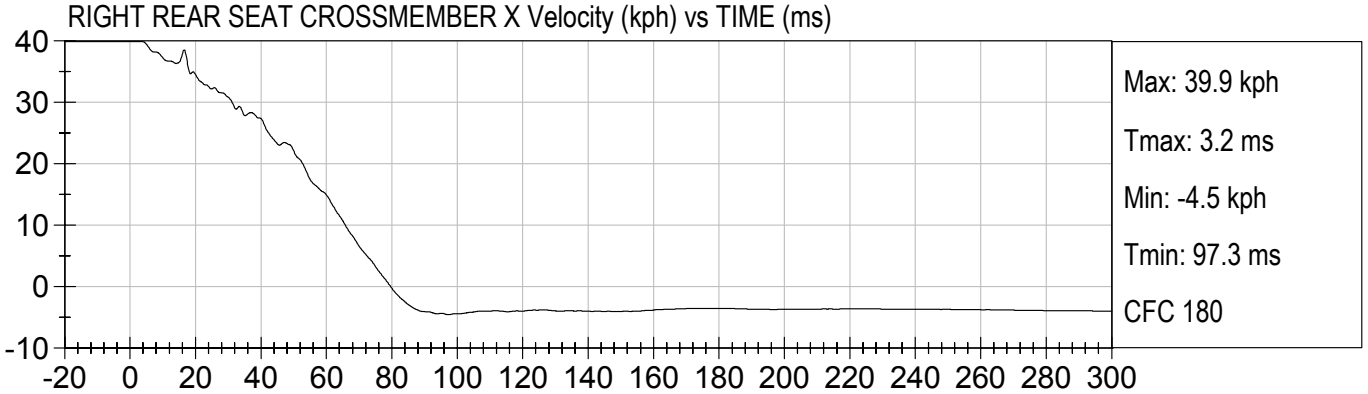
LEFT REAR SEAT CROSSMEMBER X Velocity (kph) vs TIME (ms)



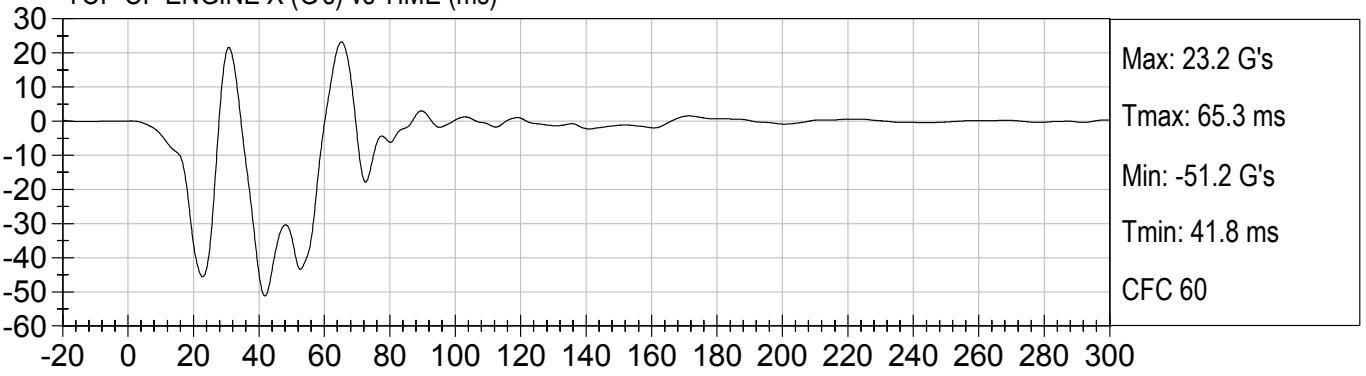
RIGHT REAR SEAT CROSSMEMBER X (G's) vs TIME (ms)



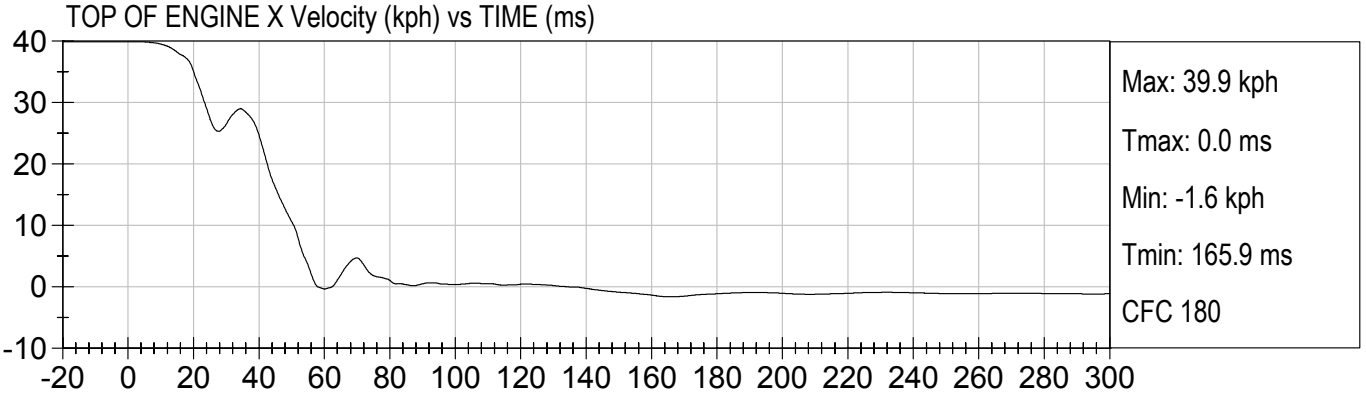
RIGHT REAR SEAT CROSSMEMBER X Velocity (kph) vs TIME (ms)



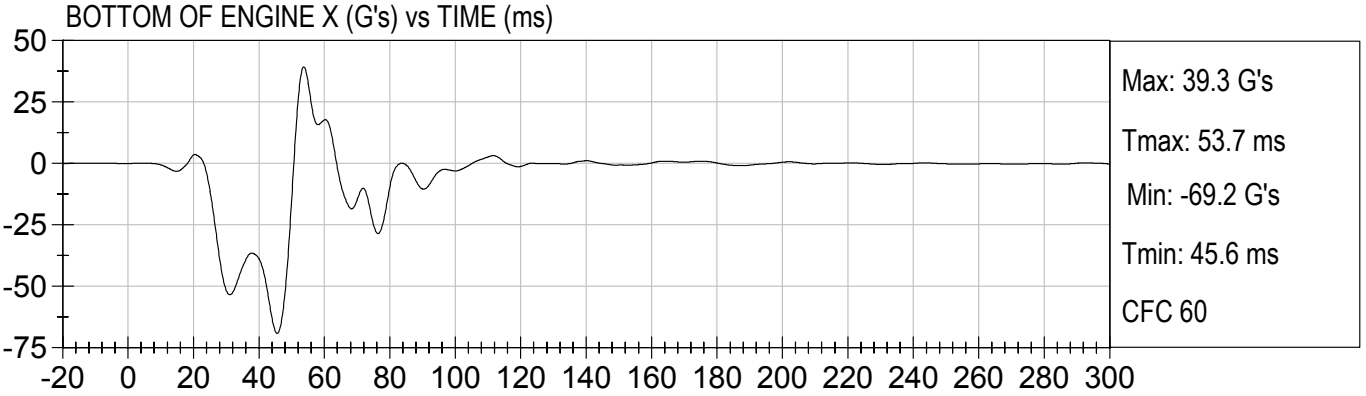
TOP OF ENGINE X (G's) vs TIME (ms)



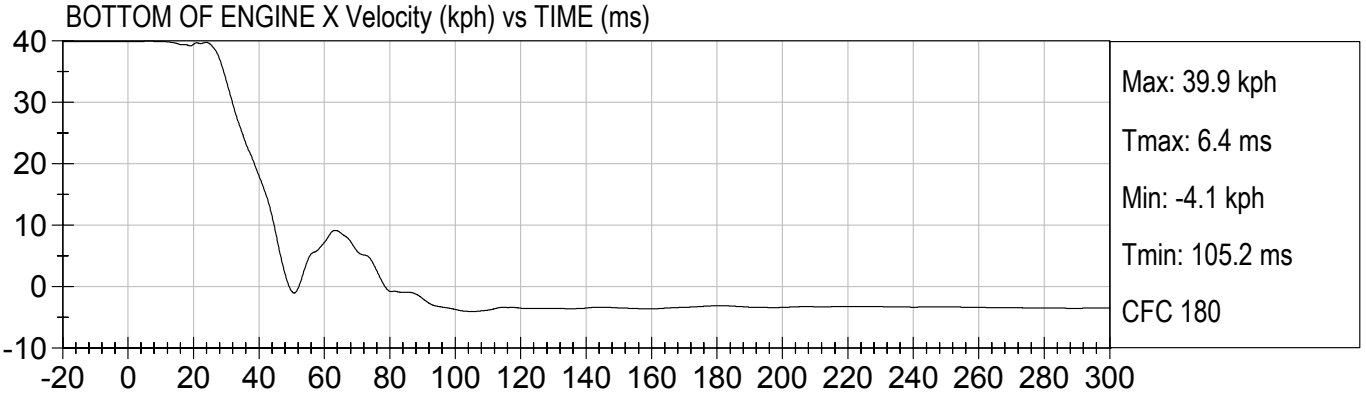
TOP OF ENGINE X Velocity (kph) vs TIME (ms)



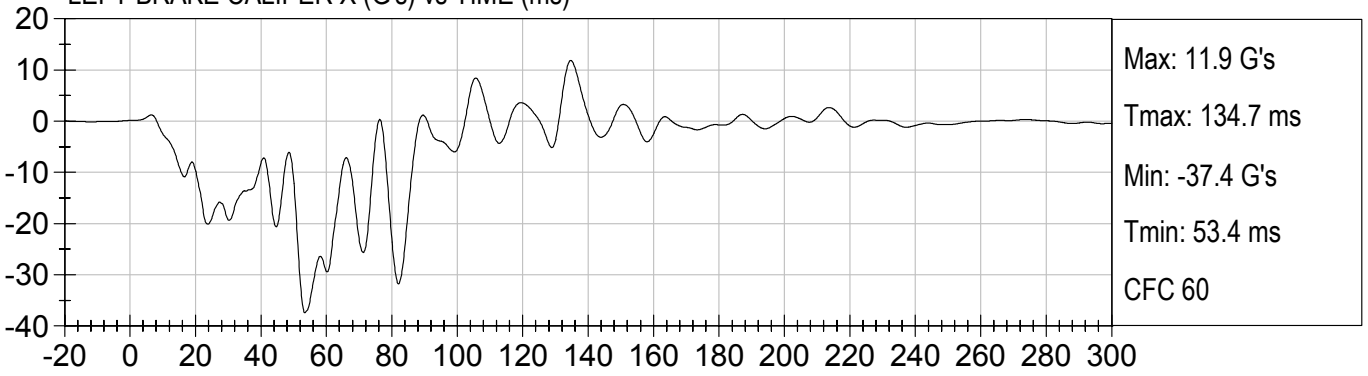
BOTTOM OF ENGINE X (G's) vs TIME (ms)



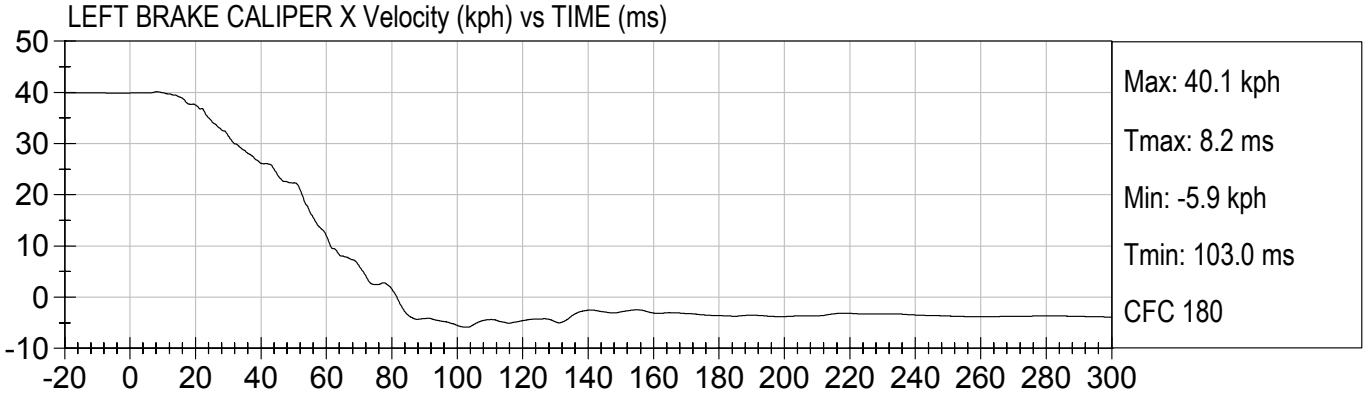
BOTTOM OF ENGINE X Velocity (kph) vs TIME (ms)



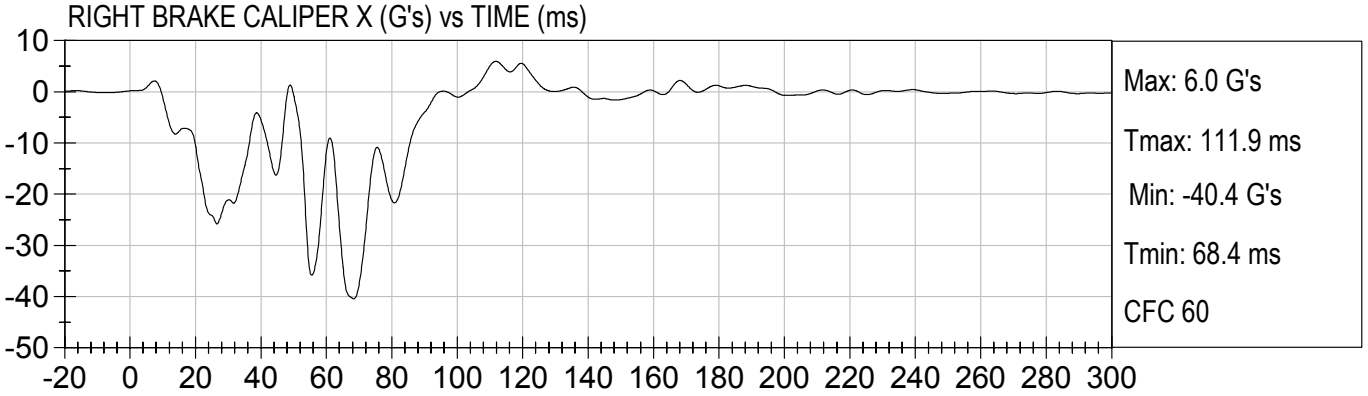
LEFT BRAKE CALIPER X (G's) vs TIME (ms)



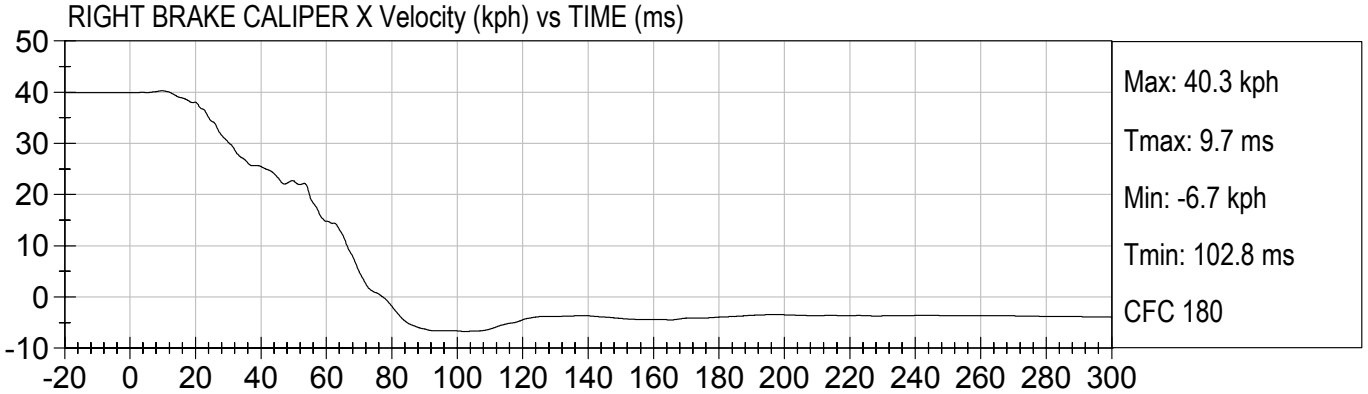
LEFT BRAKE CALIPER X Velocity (kph) vs TIME (ms)



RIGHT BRAKE CALIPER X (G's) vs TIME (ms)

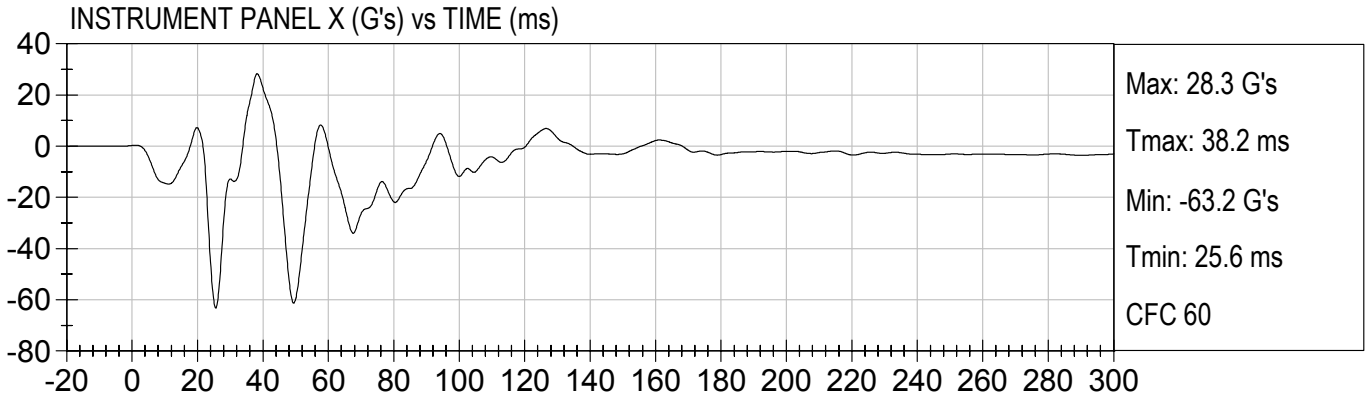


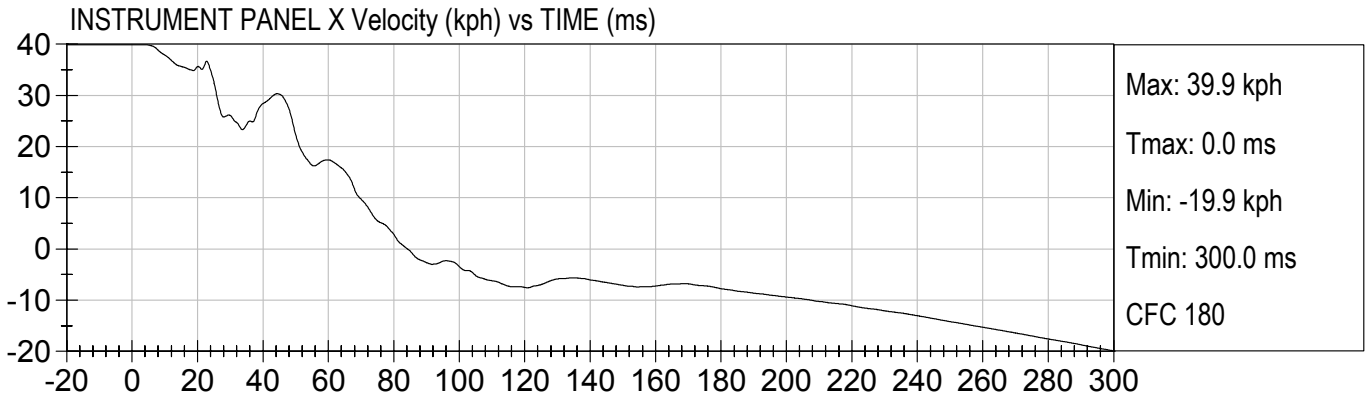
RIGHT BRAKE CALIPER X Velocity (kph) vs TIME (ms)

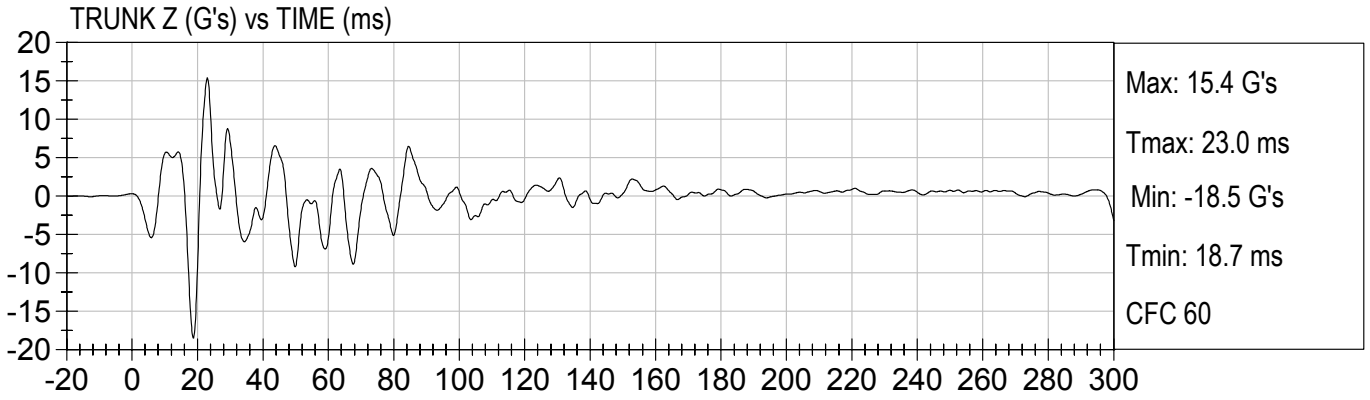


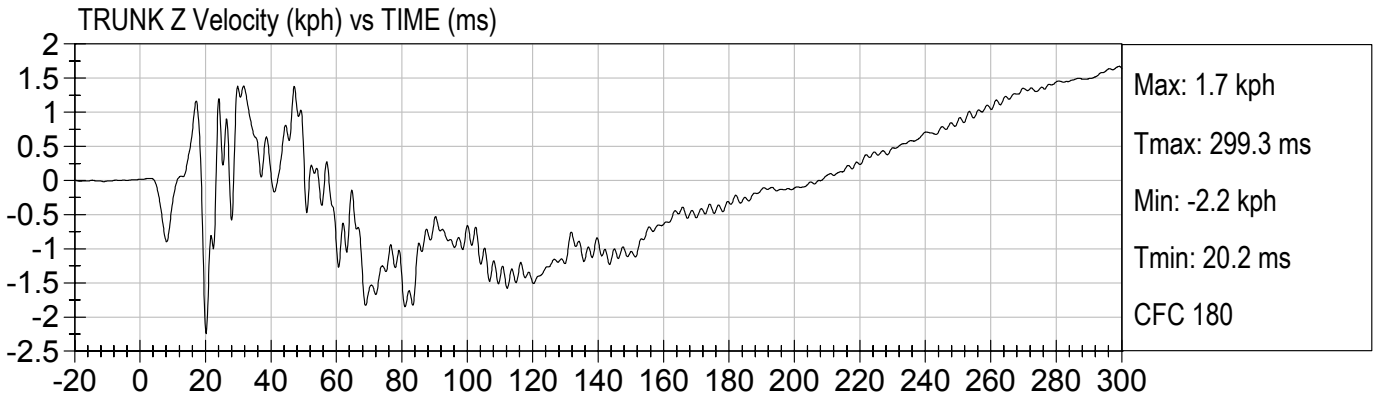
25MPH FRONTAL UNBELTED
2005 TOYOTA COROLLA (C55110)

Test Date: 08/16/05
Speed: 24.8 mph (39.9 km/h)





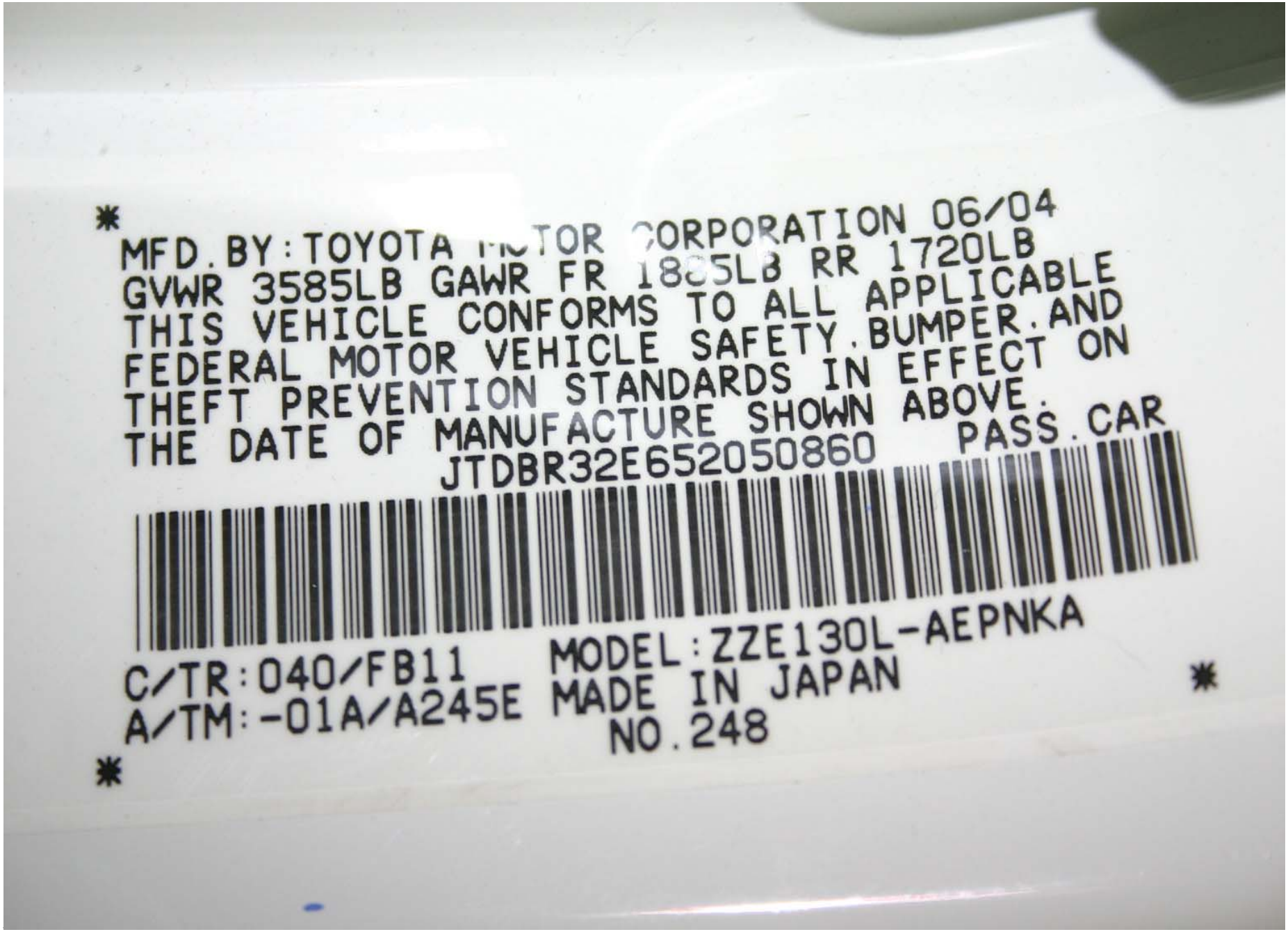




APPENDIX B

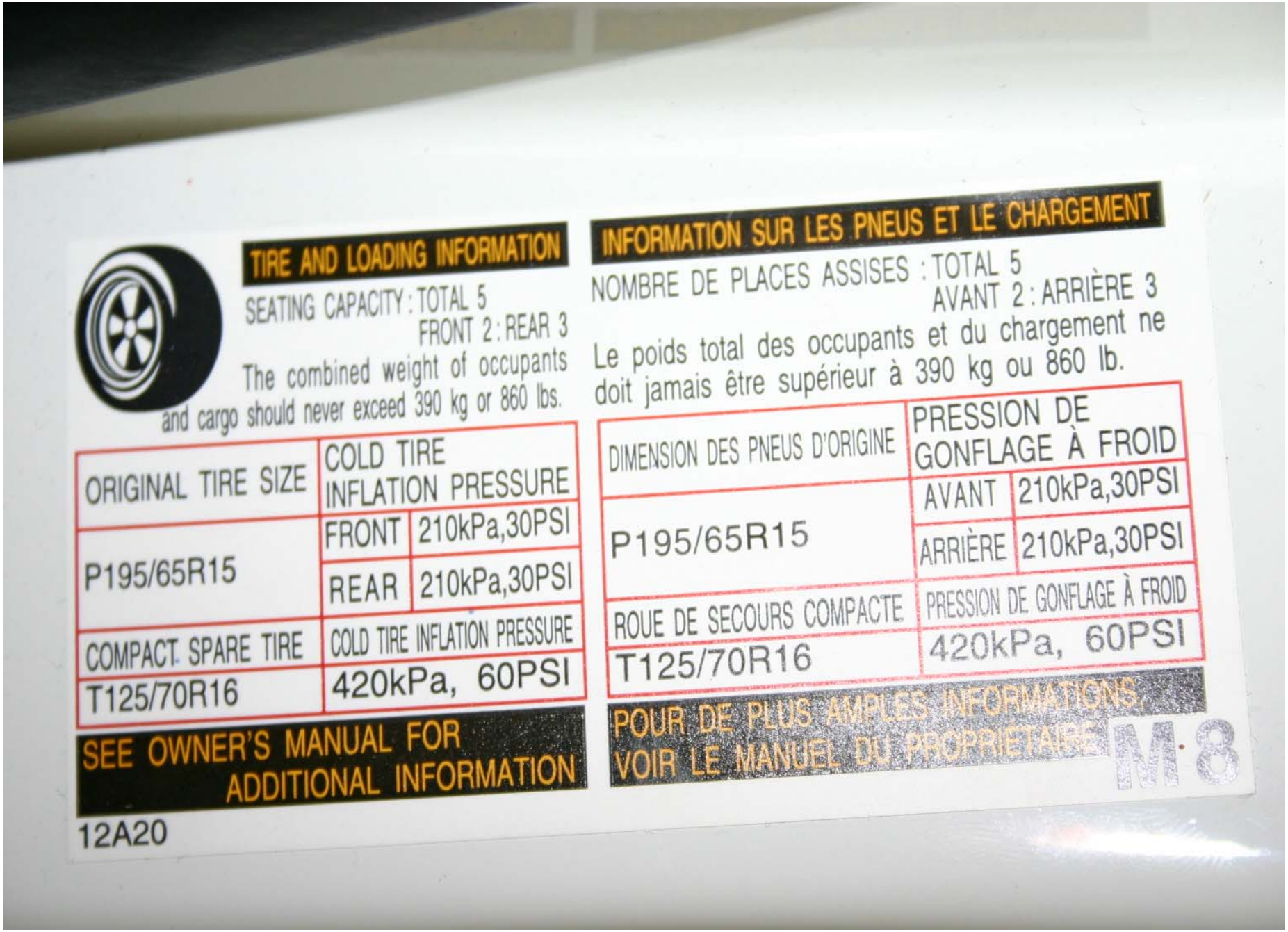
CRASH TEST PHOTOGRAPHS

TABLE OF PHOTOGRAPHS



B-1

Vehicle Certification Label



Tire Placard

Pre-Test Front View of Test Vehicle

Post-Test Front View of Test Vehicle

Pre-Test Left Side View of Test Vehicle

Post-Test Left Side View of Test Vehicle

Pre-Test Right Side View of Test Vehicle

Post-Test Right Side View of Test Vehicle

Pre-Test Right Front Three-Quarter View of Test Vehicle

Post-Test Right Front Three-Quarter View of Test Vehicle

Pre-Test Left Front Three-Quarter View of Test Vehicle

Post-Test Left Front Three-Quarter View of Test Vehicle

Pre-Test Right Rear Three-Quarter View of Test Vehicle

Post-Test Right Rear Three-Quarter View of Test Vehicle

Pre-Test Left Rear Three-Quarter View of Test Vehicle

Post-Test Left Rear Three-Quarter View of Test Vehicle

Pre-Test Rear View of Test Vehicle

Post-Test Rear View of Test Vehicle

Pre-Test Windshield View

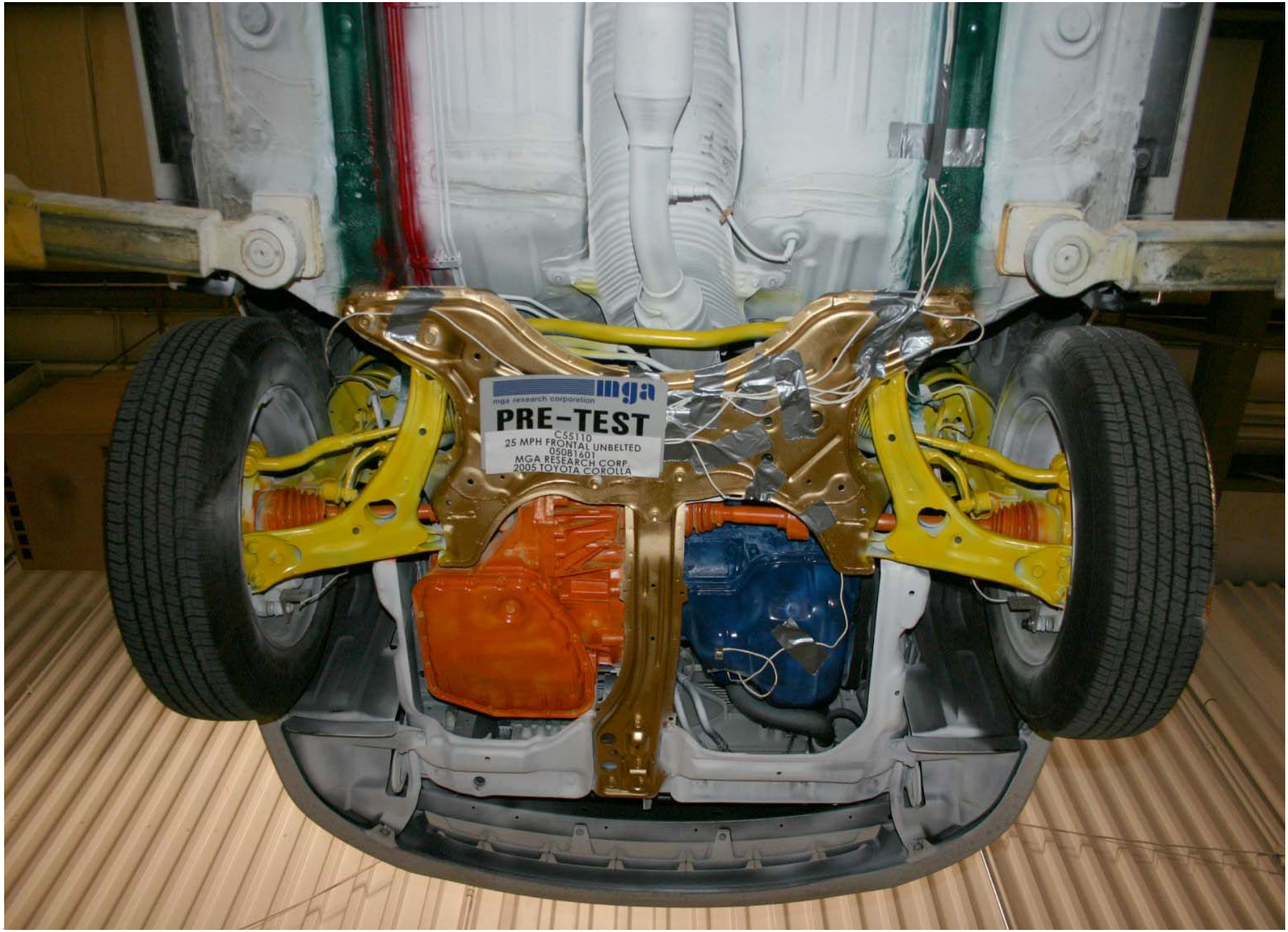
Post-Test Windshield View

Pre-Test Engine Compartment View

Post-Test Engine Compartment View

Pre-Test Fuel Filler Cap View

Post-Test Fuel Filler Cap View



Pre-Test Front Underbody View

Post-Test Front Underbody View

Pre-Test Mid Underbody View

Post-Test Mid Underbody View

Pre-Test Rear Underbody View

Post-Test Rear Underbody View

Pre-Test Driver Dummy Front View (head position)

Post-Test Driver Dummy Front View (head position)

Pre-Test Driver Dummy Position Left Side View

Post-Test Driver Dummy Position Left Side View

Pre-Test Driver Dummy Position Left Side View (Door Open)

Post-Test Driver Dummy Position Left Side View (Door Open)

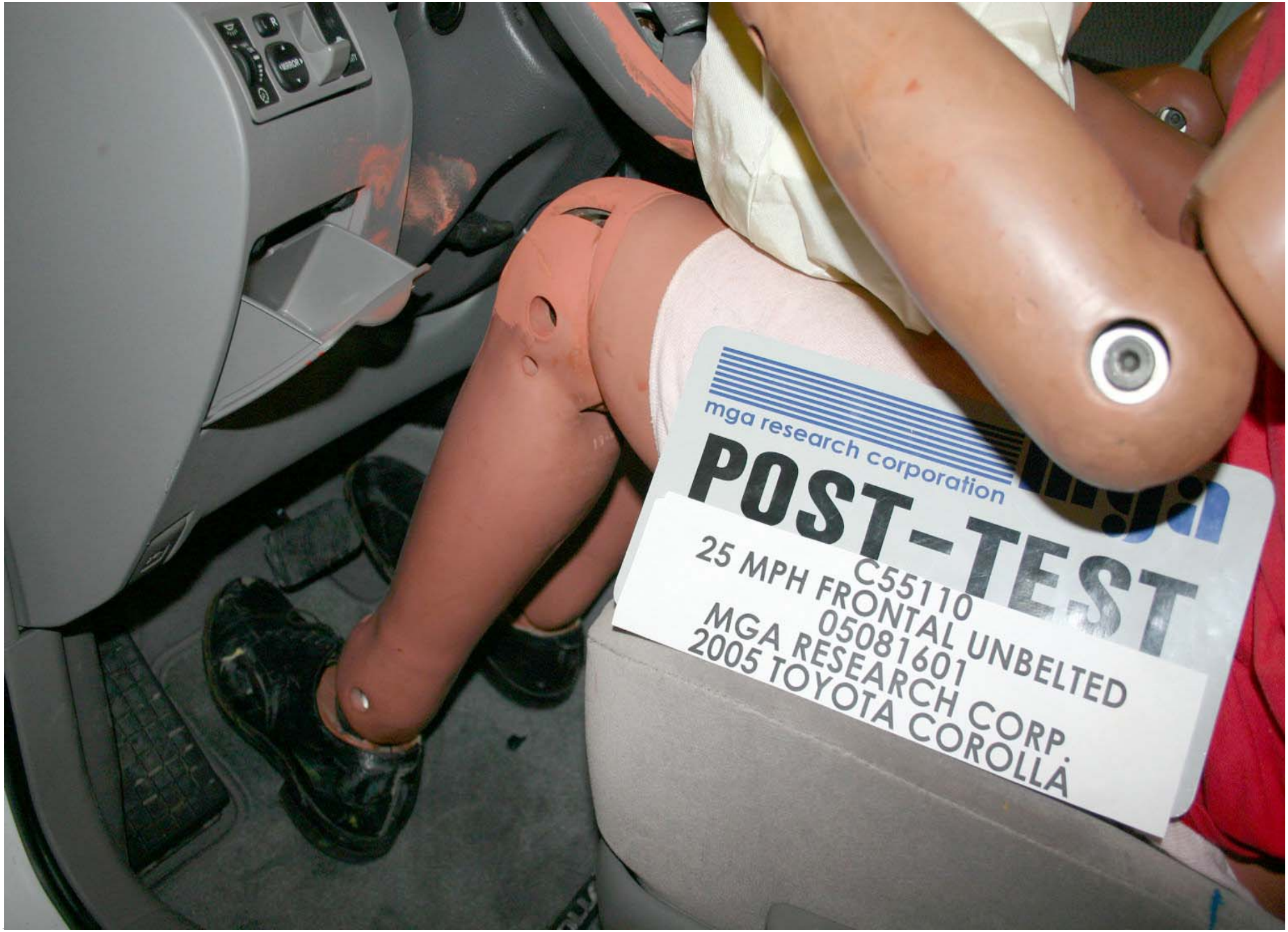
Pre-Test Driver Dummy Seat Position

Post-Test Driver Dummy Seat Position

Pre-Test Driver Dummy Feet Position

Post-Test Driver Dummy Feet Position

Pre-Test Driver Side Knee Bolster View



Post-Test Driver Side Knee Bolster View

Post-Test Driver Dummy Head Contact (headrest)

Post-Test Driver Dummy Knee Contact

Post-Test Driver Dummy Airbag Contact

Pre-Test Passenger Dummy Front View (head position)

Post-Test Passenger Dummy Front View (head position)

Pre-Test Passenger Dummy Position Right Side View

Post-Test Passenger Dummy Position Right Side View

Pre-Test Passenger Dummy Position Right Side View (Door Open)

Post-Test Passenger Dummy Position Right Side View (Door Open)

Pre-Test Passenger Dummy Seat Position

Post-Test Passenger Dummy Seat Position

Pre-Test Passenger Dummy Feet Position

Post-Test Passenger Dummy Feet Position

Pre-Test Passenger Side Knee Bolster View

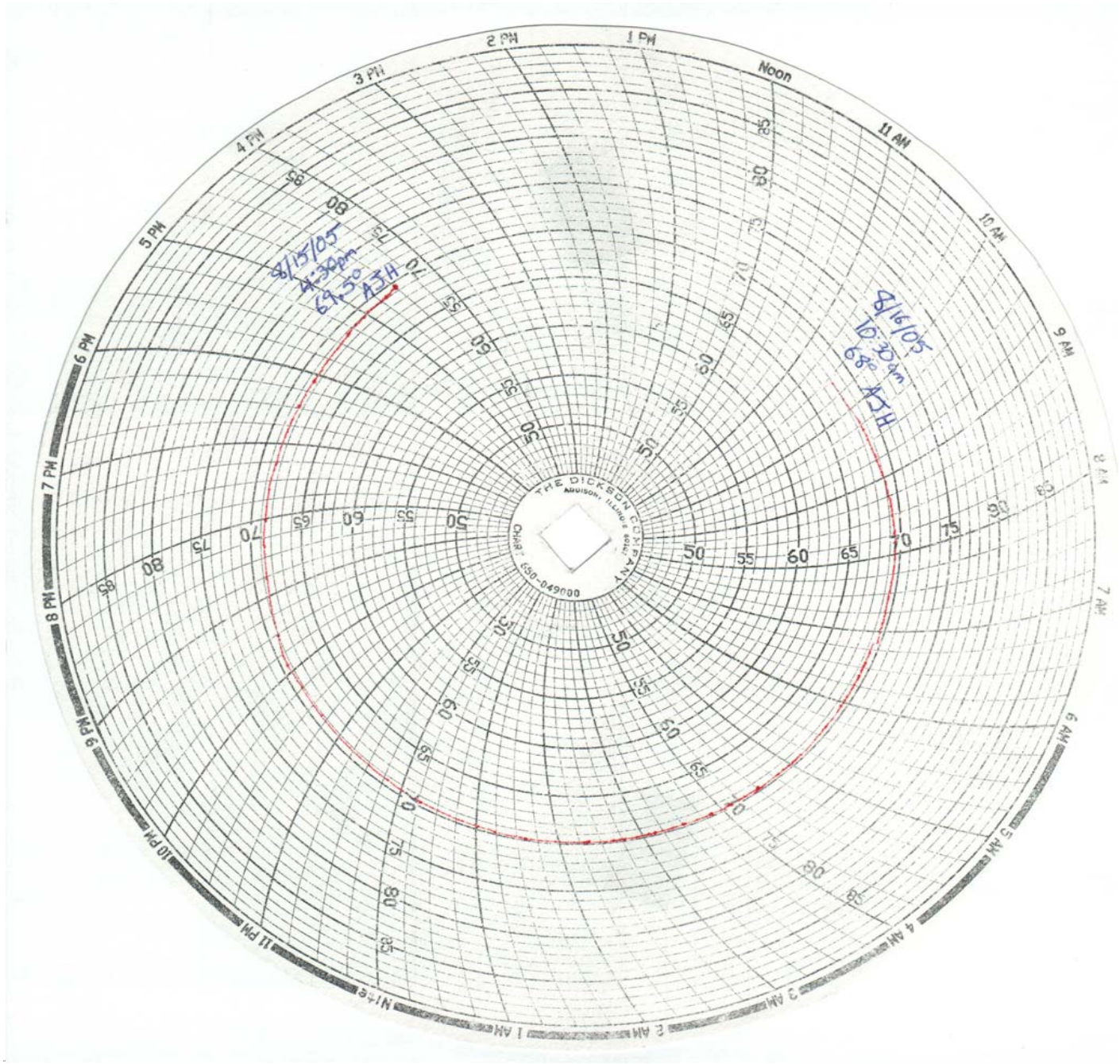
Post-Test Passenger Side Knee Bolster View 1

Post-Test Passenger Side Knee Bolster View 2

Post-Test Passenger Dummy Knee Contact

Post-Test Passenger Dummy Airbag Contact

Vehicle Impact



Temperature Plot

APPENDIX C

INSTRUMENTATION CALIBRATION

INSTRUMENTS FOR DRIVER DUMMY NO. 401

	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AGH11	Endevco	03/16/05
Head Y	AH5N9	Endevco	03/16/05
Head Z	C12811	Endevco	03/21/05
Neck Load Cell	1562	Denton	03/07/05
Chest X	AH5L1	Endevco	03/21/05
Chest Y	AH5H6	Endevco	03/21/05
Chest Z	AH5J3	Endevco	03/21/05
Chest Displacement	401	Servo	03/22/05
Left Femur Load Cell	1361	Denton	03/17/05
Right Femur Load Cell	1362	Denton	03/17/05

INSTRUMENTS FOR PASSENGER DUMMY NO. 403

	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	C10727	Endevco	03/17/05
Head Y	AGH70	Endevco	03/17/05
Head Z	AGH78	Endevco	03/17/05
Neck Load Cell	606	Denton	05/17/05
Chest X	C10591	Endevco	03/16/05
Chest Y	AGH72	Endevco	03/16/05
Chest Z	C13046	Endevco	03/17/05
Chest Displacement	403	Servo	06/23/05
Left Femur Load Cell	946	GSE	07/28/05
Right Femur Load Cell	945	GSE	07/28/05

VEHICLE INSTRUMENTS

	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	B16-Z07	Entran	03/03/05
Right Rear Seat Crossmember X	B19-Z03	Entran	03/03/05
Top of Engine X	E05-Z48	Entran	06/28/05
Bottom of Engine X	B26-Z10	Entran	03/17/05
Left Brake Caliper X	B19-Z09	Entran	03/09/05
Right Brake Caliper X	E05-Z26	Entran	06/28/05
Instrument Panel X	E05-Z24	Entran	06/28/05
Trunk Z	C29-L13	Entran	04/28/05

APPENDIX D

H POINT ATD POSITIONING CCM DATA

DRIVER CCM DATA

TOYOTA COROLLA C55110 8-16-05 TEST DATE

Driver Hpt Oscar Data 8-15-05

Index	Xmm	Ymm	Zmm
		HPT	
0001	-00198.619	+00205.163	-00239.973
		SILL	
0002	-00206.710	+00054.153	-00415.483
		HINGE	
0003	-00907.420	+00017.602	-00089.124
		STRIKER	
0004	+00001.492	-00008.757	+00000.448
		DASH	
0005	-00688.480	+00123.067	-00038.975
		HEADER	
0006	-00184.560	+00206.708	+00533.452

Driver Dummy Data 8-16-05

Index	Xmm	Ymm	Zmm
		HPT	
0001	-00205.703	+00115.038	-00241.481
		SILL	
0002	-00206.593	+00053.320	-00415.422
		HINGE	
0003	-00907.104	+00012.831	-00088.252
		STRIKER	
0004	+00001.451	-00008.196	-00000.647

From APPENDIX F
DUMMY POSITIONING PROCEDURES
FOR DRIVER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

X 12. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage.

Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)

.279 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
7.084 mm = .279 inches

.059 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
7.858 mm = .309 inches

23.1° pelvic angle (20° to 25°)

PASSENGER CCM DATA

TOYOTA COROLLA C55110 8-16-05 TEST DATE

Passenger Hpt Oscar Data 8-15-05

Index	Xmm	Ymm	Zmm
		HPT	
0001	-00199.693	-00205.667	-00216.313
		SILL	
0002	-00216.572	-00054.815	-00412.719
		HINGE	
0003	-00906.733	-00043.234	-00096.774
		STRIKER	
0004	+00001.191	+00017.147	+00002.859
		DASH	
0005	-00711.277	-00146.691	-00084.198
		HEADER	
0006	-00174.794	-00220.480	+00538.105

Passenger Dummy Data 8-16-05

Index	Xmm	Ymm	Zmm
		HPT	
0001	-00202.810	-00126.474	-00219.775
		HPT AFTER NECK ADJUSTMENT	
0002	-00202.496	-00125.371	-00217.550
		SILL	
0003	-00217.200	-00053.861	-00414.426
		HINGE	
0004	-00908.208	-00041.715	-00098.676
		STRIKER	
0005	-00000.593	+00017.002	+00001.376

From APPENDIX F
DUMMY POSITIONING PROCEDURES
FOR PASSENGER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

Previous to neck adjustment

X 11. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage.

Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)

.123 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) 3.117 mm = .123 inches

.136 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1) 2.888 mm = .114 inches

22.8° pelvic angle (20^{o} to 25^{o})

PASSENGER CCM DATA (Continued….)

From APPENDIX F
DUMMY POSITIONING PROCEDURES
FOR PASSENGER TEST DUMMY CONFORMING TO SUBPART E OF PART 572

After neck adjustment of four notches

X 12.5 Adjust the neck bracket of the dummy the minimum amount necessary from the non-adjusted "0" setting until the head is level within $\pm$ 0.5°. (S10.1)

Record the following, then go to 13 (The neck bracket was moved four notches)

.110 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
2.803 mm = .110 inches

.049 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
5.113 mm = .201 inches

23.0°pelvic angle (20° to 25°) (S10.4.2.2)